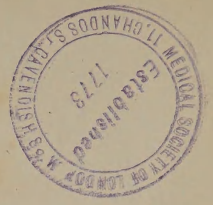




22900187117



The London

Medical Record

Published by the Society of Medicine

Printed by the Society of Medicine

Volume 1

London: Printed by the Society of Medicine, 1878



The London Medical Record

A REVIEW OF THE

*Progress of Medicine, Surgery, Obstetrics,
and the Allied Sciences*

VOLUME IV.

LONDON
SMITH, ELDER & CO., 15 WATERLOO PLACE

1876

The London Medical Record

A MONTHLY JOURNAL

Progress of Medicine, Surgery, Obstetrics,
and the Allied Sciences

LONDON: PRINTED BY
SPOTTISWOODE AND CO., NEW-STREET SQUARE
AND PARLIAMENT STREET

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The London Medical Record.

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CHAUVEAU ON THE PYOGENIC AGENT.*

During the past year M. Chauveau has continued his interesting researches as to the mode of action of the infective product of virulent inflammations, in a series of experiments which differ from the preceding ones chiefly in this respect, that the infective liquid was introduced into the arterial blood-stream, not into that of a vein.

Twenty experiments were made, the animals used being horses or asses. The infective liquid was obtained from subcutaneous suppurations produced by the insertion of setons. In each case the activity of the liquid was tested by introducing eight drops of it diluted with twice as much water under the skin of another (test) animal. In fourteen of the twenty cases it produced either a transitory swelling or an abscess, but in the remaining six a diffuse gangrenous suppuration, which in four instances was fatal. It was found that there was throughout the series a complete correspondence between the intensity of the transmitted inflammation and that of the primary inflammation from which the infecting liquid was obtained.

Mode of Injection into the Carotid Artery.—The liquid having been diluted with twice or thrice its volume of water, was strained through a filter consisting of numerous layers of *batiste* for the purpose of freeing it from fibrin-flakes and clumps of corpuscles. It was introduced in doses, corresponding from five to twenty drops of pus, by means of a very fine-pointed steel cannula. The greatest care was taken that the external surface of the point of the instrument should be absolutely clean, and that it should remain in the artery after the completion of the injection a sufficient time to free it from adhering pus, it having been previously found that, if this precaution were neglected, local effects were very apt to follow of such a nature as to endanger rupture of the artery.

In all the cases immediate symptoms were produced by the injection. Rigors often supervened even before the withdrawal of the cannula. These were soon followed by sweating and increase of temperature. In fourteen of the cases (the very cases in which the slighter effects were produced by subcutaneous injection in the test animals) these symptoms subsided within twenty-four hours. In the remaining six the subject of experiment became depressed, and then comatose. Soon the muscles of the side opposite to that on which the injection was practised became rigid. Then followed clonic convulsions, which came on in paroxysms of gradually increasing severity, between which the animal was helpless, the previously affected muscles being either rigid or relaxed and paralysed. Death occurred

usually during a paroxysm. In almost all the animals there was general inflammation of the eyeball, indicated by œdema (preceded by temporary injection) of the conjunctiva and opacity of the cornea; after death the anterior chamber was found to contain purulent liquid and purulent exudation-membranes.

The most important *post mortem* appearances were those found in the brain and its membranes. The pia mater was intensely injected, and, at the base and particularly in the Sylvian fissures, beset with purulent exudation-membranes. The cavity of the ventricles also contained purulent liquid and false membranes. The substance of the hemispheres showed everywhere minute foci of suppuration, mostly disseminated, but sometimes confluent. Along with these there were numerous hæmorrhages. Similar appearances presented themselves, but less frequently, in the cerebellum, medulla, and crura cerebri. In no instance could any sign be observed of artificial plugging, all the lesions present being those of acute encephalitis and meningitis. In one case there were infective foci of inflammation in the lungs, but in general the lesions were confined to the area of distribution of the artery into which the infecting agent was introduced.

The results of the investigations are important, first, as showing that, although the liquid employed was in all cases putrescent, it exhibited phlogenic properties only in those in which it was derived from a focus of intense inflammation, whence M. Chauveau concludes that its virulence was certainly not that of mere septicity; and secondly, as affording a better example than any hitherto published of the mode in which the infective product of inflammation acts on the brain when the utmost precautions are used to avoid embolism.

J. BURDON SANDERSON, M.D.

ROEHRIG ON THE INDICATIONS FOR THE USE OF BRINE-SPRINGS CONTAINING IODINE AND BROMINE IN GYNÆCOLOGY, ON PHYSIOLOGICAL GROUNDS AND FROM PRACTICAL EXPERIENCE.*

The indiscriminate recommendation of springs of all kinds for the treatment of complaints of females makes it almost a duty on the part of those who practise at springs of established reputation, in such cases to explain the theory of their operation and their practical employment.

The curative effects of thermal waters depend on their stimulating effect on the nerves of sensation. This results from the fact that the salts of warm waters, when kept for some time in contact with the skin, effect a certain amount of chemical solution of the cells of the epidermis and thus stimulate the skin. The stimulation of the peripheral terminations of the nerves communicates itself to the central portions of the nervous system, the brain and spinal column, and especially to the medulla oblongata, whence by reflex action the most important vital processes are influenced. A warm brine-bath causes a diffused redness of the skin, which takes some hours to return to its natural degree of injection. It is easy to understand how this artificial expansion of the capillaries of the skin must tend to relieve the more distant organs, which may be in a state of congestion; and how the continued use of this mode of

* *Gazette Hebdomadaire*, no. 37, 1875.

* Abridged from the *Berliner Klinische Wochenschrift*, November 15 et seq.

derivation must operate. Further, the powerful action of brine-baths in promoting the transmutation of tissue, increased oxidation, increased secretion of urea, along with diminution of phosphates of soda, and especially of phosphates of lime—all which are well ascertained facts—gives distinct indication for their employment in diseases of women. Not only in chronic affections do the baths do good by stimulating languid constitutions to more rapid transmutation of tissue, but by producing increased oxidation they help materially towards the absorption of old exudations.

But we are especially concerned with the reflex action of brine-baths on the urino-genitary system. It is universally admitted that brine-baths increase the secretion of urine. Of still greater importance to us is the specific stimulation of the uterus by these baths. It has been shown by experiments on animals that chemical stimulation of its surface, or the application to it of electricity, of heat, or of ice-bags, causes active contraction of the uterus. This corresponds with the high practical utility in atonic conditions of the uterus of the use or application to the skin of mustard, of iodine, and stimulating fomentations with strong mother-lye. All this makes it easy to see how the daily stimulation of the skin by the use of brine-baths may react powerfully on the uterus. I cannot enter into detail as to how the operation of salt-baths is supported by the internal use of waters containing iodine and bromine. It is well known that salt waters, when drunk, increase oxidation and secretion of urea, and produce diuresis; and there is little doubt that the quantity of iodides and bromides present in salt-waters helps materially to promote the absorption of exudations, and never produces in the system the disagreeable effects which often follow heroic doses of them.

Admitting all the progress that has been made of late years in the study of the diseases of women, yet I think it must be granted that too much attention has been paid to the use of local measures in their treatment, and too little to constitutional ones. Thus the majority of medical men who have employed for years, and with little result, every variety of local remedies in the treatment of uterine and vaginal catarrh, would have done well to have remembered that it is often an accompaniment of heart and of lung affections, and still oftener of a chlorotic or scrofulous state of system. In fact, all scrofulous patients having a feeble heart with an atonic condition of the blood-vessels, have a tendency to hyperæmia of all the mucous surfaces, and especially those of the uterus. Catarrhs of the mucous lining of the uterine organs, as of other organs, often disappear very rapidly, as soon as the scrofulous cachexia is improved by the judicious use of brine-baths and of preparations of iron, and without any local measures. I therefore cannot too strongly insist that such baths are applicable to almost all cases of uterine catarrh, even though the signs of constitutional disorder may be slight. The effect on the nutrition of the system of its baths has given Kreuznach its world-wide reputation in chronic leucorrhœa, which is so widely spread throughout the low parts of Belgium, of Holland, of the Baltic provinces, and in England. Little more local treatment is usually required than the injection of a mineral water into the vagina, more for the removal of the secretions than for any more special purpose; but it is more efficacious than plain water. Only the patients must be instructed to use the injections

very gently, and not of too low a temperature. The specula to be introduced while bathing, to admit the application of the water to the os uteri, ought also to be selected more carefully than is usually the case, as much harm often follows the employment of too large instruments. Simple washings and cleansing sitz-baths are aids to the use of the injections. The local measures just mentioned are far less effective in chronic uterine catarrh than in chronic hypersecretion of the vagina, because the injections scarcely reach far enough; and the former may be often cured without the use of the local applications, which are wearing out the life of the patient.

It must finally be observed that it is often difficult to say whether the feeble condition of the patient has been induced by the local catarrh, or whether the catarrh is the result of a feeble state of constitution. But, after all, it is not a question of very great importance in ordering the brine-baths, because in any case the main indication is to raise the strength and relieve the poverty of blood of the patient.

The etiology of chronic metritis agrees pretty much with that of chronic endometritis. The same causes produce sometimes inflammatory irritation of the whole substance of the uterus, at other times an inflamed state of its mucous surface, or perhaps the two combined. Parenchymatous metritis, too, seldom springs up independently; it is usually attributable to some disturbance of the circulating fluid, to a scrofulous diacresy, or to a torpid constitution. The first indication is, therefore, to treat the general condition—and this is best done by a strengthening diet, and by brine-baths. Notwithstanding Scanzoni's dictum that a permanent cure of metritis chronica is to be counted an impossibility, yet I am convinced that it is frequently favourably modified by the Kreuznach baths. The baths in one or more seasons in any case moderate the sufferings, and very often cause a gradual improvement, and diminish the chance of relapses. The amelioration takes place chiefly in the older cases, in which the symptoms of local congestion have begun to abate. Powerful stimulation of the renewal of tissue, such as is produced by salt-baths, is the most rational way of acting against the diacresy which lies at the bottom of the affection. Local treatment is comparatively unimportant. Only we must not forget that the amount of stimulation produced by the baths must be carefully proportioned to the degree of irritability of the patient; that the strength, the age, and peculiarities of constitution of the patient must be taken into account. I believe that one of the causes of the success of Kreuznach treatment is that it is the practice there, first to accustom the patient to the use of the milder baths, and, when the skin no longer reacts under their influence, to proceed to the stronger mother-lye waters. But by the use of brine-baths we not only alter the assimilation and nutrition; we can also, by making the waste of the body exceed its assimilation, act powerfully on various plastic exudations which are outside the ordinary circulation, but which may be brought within its limit and be absorbed, owing to the increased oxidation which has been set up. And practically I am able to refer to a whole series of cases in which there can be no doubt that there has been complete absorption of enlargements of the uterus. Of course, it is only while there is a certain amount of active congestion that such results are possible. They cannot be looked for in later stages, when there is retraction of the cellular tissues into a firm fibrous mass, with

occlusion of the vessels. Although the internal use of the Kreuznach springs is frequently combined with the employment of the brine-baths, it must be admitted that the use of other purgative mineral waters is in many cases more efficacious than that of the Kreuznach Elisen well. But these aperient waters are only of use as long as the hyperæmia of the parenchyma of the uterus is still present. We have to add to the ordinary full and sitz-baths, poultices, or moist applications of the mother-lye; which, if kept on during the night, increase the temporary stimulation of the skin to a real eczema, derive from the internal congestion, and diminish the local pain very materially. The general effect of this action on the skin, and secondarily on the muscular tissue of the uterus, may be compared to the effect of sucking the breast in producing contraction of the womb.

We are apt to look with too little hope at completed processes of exudation. As soon as an exudation is cut off from the stream of the circulation, we consider its absorption a hopeless matter. But I believe that an artificially produced congestion, bordering almost on inflammation, and serous effusion, is the best means of resolving the indurated tissues. The difficulty is to keep the congestion within bounds, and not let it run into actual inflammation. On the principles of this theory I account for the admirable effects I have witnessed from the persistent use of continued douches of very warm water, given in a strong jet internally.

I have made very extensive use of injections of this sort, and have on several occasions been gratified in finding that I had produced not only softening, but partial absorption, of hard swellings. I have always first used injections of the water at its natural temperature, and have only very gradually increased it up to 103°. I have found that the addition of the mother-lye to the injections has answered excellently. In cases where the cervix is indolent, I have found the powerful action of the Meyer clyso-pump far more effective than that of the ordinary irrigator. But the occurrence of more unfortunate results shows the greatest necessity for precaution in the use of such procedures, which should never be left to the patient alone. In comparatively fresh cases of exudation, the use of moderately warm injections with Scanzoni's irrigator will be sufficient. On the whole, I believe the bath-speculum to be much more frequently employed than is at all necessary, and, indeed, to be often injurious. Now and then it may be necessary to add at bedtime a sitz-bath to the ordinary full bath; but the position in it is often inconvenient in uterine complaints, and, indeed, may cause slight displacements of the uterus.

What has been already said applies equally well to parametritis and to perimetritis. It is a real pleasure to observe how the methodical use of the baths and of moist warm poultices of mother-lye provokes the complete absorption of old perimetritic thickenings, of ligamentous adhesions between the peritoneum and the uterus, and even of hard tumours of the cellular tissue of the pelvis.

What has been already said prepares us to see how brine-baths may be of service in certain uterine displacements, especially where flexions are the result of relaxation of the uterine textures, which has been produced by general weakness of constitution and by torpid assimilative powers, often, having a foundation in scrofula. In such cases the waters of Kreuz-

nach not only exert their general influence in improving the nutrition of the system, but by their action on the skin exercise a specific influence on the innervation of the uterus, exciting it to contraction. Both in theory and in practice we have many proofs of this. It is a matter of daily experience, that strong poultices of the mother-lye occasion pains in the lower part of the abdomen, which are certainly referable to uterine contraction; and a further confirmation is found in the frequency of abortion in those who are so ill-advised as to use the Kreuznach baths during pregnancy; and another proof is to be found in the beneficial effects of these waters in menorrhagia.

If we consider the various causes of uterine hæmorrhage, we find that they may be referred either to external causes, which produce congestion of the uterus, or to conditions of the nervous system dependent on disturbance of the general system, or of particular organs. In most of these cases the Kreuznach waters are very efficacious; and we need not wonder at this, when we observe the redness of the skin, the immense derivation to the surface, and consequent alteration of circulation, which is produced by the stronger baths. As compared with this powerful influence, the ordinary local measures of stimulation, as the application of blisters, of dry cupping, or of mustard poultices, are matters of but small importance.

When menorrhagia depends on a general atonic condition, the action of brine-baths in restoring tone to the muscular system has a certain analogy with that of ergot; only, as it is less immediate, so also is it more permanent. The brine-baths are indicated whenever there is an anæmic and scrofulous condition, and when a case is one that will profit by fresh air and good nutrition. I would not, however, be supposed to say that menorrhagia occurs only in debilitated women. On the contrary, debilitated females are perhaps more likely to suffer from amenorrhœa. We shall only say about the treatment of this last condition, that from what has been already said about the general tonic influence of baths, it can be easily seen how they may prove excellent emmenagogues. Although dysmenorrhœa may sometimes be dependent on general conditions, yet it is more often so on local ones requiring special treatment. Warm baths and mother-lye poultices, therefore, are of comparatively little value in the treatment of this affection.

It is thus chiefly in cases of irregular menstruation, depending on constitutional causes, that the waters of Kreuznach are efficacious. Where there is the complication of granular erosions, of fungoid granulations, or of polypus, all of which require local treatment, they are of no avail; but they often prove of much value in uterine hæmorrhages occasioned by the presence of fibroid tumours in the cavity or in the walls of the uterus. I do not allude to temporary palliative action on the accompanying hæmorrhages only during treatment at Kreuznach, but to improvement that has lasted for months. Indeed, every year cases are occurring in my practice, where such has been the influence of the treatment on the uterine circulation, that all hæmorrhages, and even the catamenia, have been absent for more than a year. This is a fact which will astonish many practitioners. The most probable explanation of this seems to be, that the baths have induced a firm contraction of the muscular elements of the uterine structure, and possibly of the fibroid tumours

themselves, which may contract at the same time on their fluid and vascular contents. But, apart from all theory, it is a positive fact that the violent menorrhagias connected with fibroid are generally greatly relieved at Kreuznach; and, indeed, this applies to menorrhagia generally, provided the baths are not used of too high a temperature.

It is matter of dispute whether, as some think, fibroid tumours may be dispelled by treatment, or whether, as most physicians think, there are only a few rare cases in which small tumours disappear after labours. Without giving in my adherence to either side, I think I can give some hints which will help to make the use of the Kreuznach waters more precise in such cases. I have never as yet had the good fortune of Dr. Prieger, in seeing any case of fibroid tumour totally absorbed; but I can say in all honesty that frequently, after two or three years' use of the waters, a cessation of its increase has been observed, that in a few cases every year a diminution of the tumour to one-half of its original size occurs, and that other cases generally improve as regards the accessories of such tumours, especially the hæmorrhages. Among ninety-six patients (of whom, by the way, only six were unmarried) there was in twenty-three cases a diminution of size of the tumour by at least one-fourth of its bulk; in forty-eight cases the size of the tumour already attained was not increased; while in the remaining twenty-five cases no influence on the size of the tumour was observed. The most favourable results were in cases where the bath treatment had produced a cessation of the menses from six to thirteen months, and when periodical congestion was thus avoided. Besides baths strong enough to irritate the skin powerfully, I ordered baths of the mother-lye of an hour's duration, and poultices of it to be kept on all night; and these were to be continued for some months at home if the weather be favourable. I soon gave up injecting into the vagina and the use of the speculum, as I generally found them followed by bad effects.

Considering that the curative action of the Kreuznach waters lies chiefly in their stimulation of the skin, I have more and more given up the internal use of the Elisen Spring. I greatly prefer the Marienbad or Kissingen water, because the Elisen Spring is in small doses rather constipating, and, if given in large enough doses to be aperient, is apt to produce catarrh of the bowels. The regular and free action of the bowels always relieved the patients. As the effect of the subcutaneous injection of ergot has been said by Hildebrandt to be the diminution of the tumour by the increased action of the muscular fibres, I thought it right to use it as an adjunct to bath treatment, but I met with no satisfactory results. In fine, if we cannot always very directly influence fibroid tumours, still, as we know that their growth usually comes to an end at the climacteric period, it is of much importance to know that we have in these waters a means of checking the hæmorrhages and of supporting the health of the patient.

The same treatment is of great value in chronic oophoritis, while it entirely fails in ovarian dropsy, which has, of late years, most properly formed only a subject for surgical treatment; and I am strongly of opinion that those who cannot make up their minds to undergo an operation, live longest, who have least to say to medical treatment of any kind. But, although there is no chance of curing such cases at Kreuznach, yet hundreds of them are sent thither every year; and something may be done to improve

their health by the use of the baths, of nourishing diet, and of the lighter chalybeates. I may also mention that a certain amount of benefit is gained in this disease, as in the other congestive ones of which we have been treating, by the patients usually being removed from sexual intercourse while undergoing the bath treatment, which undoubtedly has a very unfavourable influence in all uterine affections.

In conclusion, I may add that I have obtained very satisfactory results in chronic hypertrophy of the mammary glands. I have never effected any absolute cures, but I have also never failed to do some good in such cases. In 20 per cent. of cases of lobular fibroma there has been a palpable diminution of size, and in the other cases the swelling has ceased to make any progress. I have used baths and the Elisen Spring; and as for local measures, after trying every variety of them, I have latterly confined myself to compresses of the mother-lye kept on during the whole night.

J. MACPHERSON, M.D.

BUCQUOY ON PLEURISY WITH GANGRENE OF THE LUNGS.

Nos. 84, 86, 91, 93, and 95 of *L'Union Médicale* for 1875 (July 17, August 3, 7, and 12) contain a paper of great interest, by Dr. Bucquoy, of the Hôpital Cochin, on the association of pleurisy with gangrene of the lungs, and on the question as to the occurrence of a form of pleurisy which is gangrenous from the commencement (primary gangrenous pleurisy). This memoir was read to the Medical Society of the Hospitals on July 9 last, and was suggested by the report of a case of sudden death during paracentesis thoracis in a case of M. Ernest Besnier's, where there was gangrenous pleurisy. As M. Bucquoy's paper occupies nearly a score of pages, we must be contented with an abstract of the cases related, and of the more important points raised in their discussion. Very few such cases are to be found in medical literature. The three now given are, therefore, all the more interesting from their rarity.

The first case is that of a dealer in hair, aged forty-three, admitted November 27 into the Hôpital Cochin. He had had no previous illness, was of good constitution, strong for his age; only, like most who follow this trade, he had been a free drinker. Ten days before his admission he had been wet through, late at night; he was much chilled, and it was some time before he could become warm again. Next day he was wet again, and felt uncomfortable. He returned to Paris from Etampes, and was at once attacked with repeated rigors, cough, and spitting. Very soon violent pain under the left nipple, and increased fever, compelled him to take to his bed. From this day forward he declared that his breath was stinking, and that his sputa 'poisoned him.' On admission eight days afterwards, there was still acute pain in the side, and jerking and painful respiration. The cough was accompanied with a scanty, dirty-grey expectoration, the fetid smell of which was quite characteristic. Pulse 100, temperature 101.2°. There was anorexia; the bowels were regular; the tongue was covered with a whitish coat. There was absolute dulness on percussion in the lower third of the right chest, front and back; absence of tactile vocal fremitus, and vesicular breathing. Some sibilant râles were heard in the left lung. The treat-

ment was dry cupping, and a mixture of carbolic acid; afterwards a saline. There was no change, except more expectoration. More violent cough, and inability to lie down, even at night, were the only changes in the next few days. On November 30, above the dull portion, near the spine of the scapula, bronchial breathing was heard pretty widely, and in one spot cavernous respiration, with moist râles, which, on coughing, became absolutely gurgling in character. From time to time there was distant amphoric breathing. Despite the severity of the local symptoms, the temperature became lower, fluctuating between 101° and 98° 96°. His countenance changed; his general condition grew worse. Tincture of eucalyptus, given in half-drachm doses, instead of the carbolic-acid mixture, seemed to have the effect of quieting the cough and diminishing the fetid odour of the breath and of the sputa; and during some days the patient remained in nearly the same condition, without rise of temperature or pulse (the latter remaining between 80 and 100, the former never exceeding 102°). On December 8, restless but not furious delirium supervened. He sometimes tried to get into the other patients' beds, but generally remained seated, uttering incoherent words and picking at the bed-clothes, etc. The local changes were chiefly dependent on the fulness or the reverse of a cavity. The sputa were less abundant and less fetid; but the cough always revived the gangrenous odour. After a restless night he died on December 10. At the necropsy, when the chest was opened, there was a mixed odour of gangrene and eucalyptus. There was purulent pleurisy of the antero-lateral portions corresponding to the base of the right lung. The pleurisy was completely encysted, and the pouch, which contained 1½ litres (3½ pints) of pus, was divided into two cavities, an anterior and a lateral (axillary) one, separated by a partition containing an orifice admitting two fingers. The partition was formed partly of thickened pleura, and partly of a tongue of indurated and condensed lung. Just above the collection of pus there was a vast cavern scooped out of the middle lobe of the lung, and occupying nearly the whole of this lobe. The outer wall was formed entirely of thickened pleura, the inner and upper one was formed by pulmonary tissue. The walls were lined with greyish broken-down material, with the characteristic odour of gangrene. Above the cavity there were cicatrices of whitish fibrous tissue, and the lung was condensed and blackish grey (iron grey). The lower lobe of the lung was compressed by the pus, and did not crepitate at all. It contained a small cavity with inoffensive serosity. On the left side were old tough pleural adhesions. There were no tubercles in either lung, nor changes in other organs, except congestion. There was commencing fatty degeneration of the liver. The spleen was very friable, and its capsule much thickened and almost cartilaginous.

In this case the pleurisy set in after a common cold, and it is very remarkable that the sputa were fetid from the first day. On this point there seems no reason to doubt the man's word. At all events, in a day or two's time there could be no reason to doubt the gangrene of the lung. Ought we to call this a case of 'primary' gangrenous pleurisy? Certainly not, for it is clear that the lung was first attacked. In M. E. Besnier's case, on the other hand, there were no indications of the horrible nature of the contents until the tapping. We may therefore admit the possibility of a pleurisy gan-

grenous *ab initio*. But even in his case there was no anatomical proof, and we know that there may be most extensive gangrene of the lung without the breath or sputa giving the characteristic fetid odour. Fournet's second case (*De la Gangrène du Poumon, l'Expérience*, tom. i. p. 324) is very instructive as regards this. A young girl, aged fifteen years, who was only ill fifteen days, had a large gangrenous patch at the base of the left lung, which had perforated this organ. There was pleuritic effusion before the perforation, and it was sufficient to reduce the lung to the size of a fist. The effusion had all the characters of gangrene, and the patch affected communicated with the bronchi. Yet in life there was no odour of gangrene in either breath or sputa, nor were the latter at all modified in consequence. Sometimes the fetor is noticed very late. A young man in Dr. Aran's wards at Saint-Antoine, long ill with tubercles, had, when he died, five pints nearly of horribly fetid sanguineous fluid in the pleura. The pleurisy was therefore thought to be primarily gangrenous, but M. Aran divided the lung, and found in the lower lobe a patch of gangrene of the size of a turkey's egg, communicating by a circuitous route with the pleura on the one hand, and with a large dilated and inflamed bronchus of brownish hue. Two days before death, those near him were struck with the fetor of his breath, and noticed that he had spat blood with the same smell. [*Journal de Médecine et de Chirurgie pratiques*, 2^e série, t. xxvii. p. 301, 1856.] Sometimes the pleurisy exists for a considerable time, and the gangrene of the lung supervenes, as in the case of Professor D—, recorded by M. Millard. Of this character is the next case; and when perforation takes place, the pyopneumothorax is usually rapidly fatal.

Case 2.—A carrier, aged forty-three, had pleurisy of the right side, with moderate effusion. He was admitted into hospital on October 30, 1872, after four days' illness, attributed to cold. His previous health had been excellent. On the fifteenth day (November 11), at his own request, he was discharged to go to Vincennes. The effusion had nearly subsided. The pulse had not much exceeded 80, and the temperature was nearly normal all the time. A few days after reaching Vincennes, he noticed his breath to become fetid, and on the sixth day (November 17) he spat a good deal of blood. In spite of this he left, and resumed work on the 19th. After a few hours he began to cough, and, according to his own account, spat up more than a quart of blood. Appalled at this, he re-entered the hospital, very pale, free from fever, with appetite, but his breath and sputa were horribly offensive. The latter were also greyish and ragged-looking. On the 30th his general health began to suffer. The carbolic-acid mixture was replaced by one of tincture of eucalyptus, with opiates. This relieved the horrible frequency of the cough. On December 6 there was fresh hæmorrhage. Then he became worse and feverish. The cough was less frequent still, the expectoration ceased, the gangrenous odour disappeared, and the physical signs were those of hydro-pneumothorax, which could be nothing less than pyopneumothorax. There was a well-marked succussion-sound. Paracentesis was practised, and as soon as the pleura was reached, a jet of badly formed pus, the odour of which filled the ward, escaped. The pleura was well washed out, and, the opening being free, fragments of ragged rotten lung escaped. In the evening he seemed much better.

Three times in twenty-four hours the pleura was injected with one-third spirit to two-thirds water. After a day or two he had diarrhoea and oedema of the feet and legs, and on the sixth day after the tapping he died. At the necropsy the chest-wall was a dirty white (*blafarde* = *blech-farbe*) where the wound was; the edges were blackened and sodden. The periosteum of the eighth rib was mortified, the rib itself slightly necrosed. In this case there was also an encysted pleurisy with two pouches, communicating by a sort of canal, the width of two fingers. The walls of the cyst were formed of thickened but friable pleura (both layers) with many false membranes—and not much pus—owing to the irrigations. There was a patch of gangrene in the lower lobe of this lung, and forming a cavity, in size about that of a hen's egg. No trace of communication with either pleura or bronchi could be found. The contents were fetid sanious pus, with ragged morsels of rotten lung floating in it. There was much congestion and oedema of the left lung, and in its base two small gangrenous caverns. The other organs presented nothing remarkable. Although no communication with the pleura was found, the sudden onset of the physical signs of hydro-pneumothorax shows that it must have occurred. So do the fragments of lung-tissue in the washings. Notwithstanding this case, there may be multiple centres or several patches of gangrene in one or both lungs without the patient's life being immediately compromised, as is shown by the following.

Case 3.—On April 3, 1872, a single girl, aged twenty-two, a sempstress, who had been ill about a month, though previously healthy, was admitted into the same hospital (Cochin). She declared that even in infancy she had often expectorated, from time to time, thick and fetid pellets of mucus, which even filled her mouth. [Naso-palatine catarrh with cheesy tonsillitis?—*Rep.*] On admission there were slight pyrexia, stabbing pain below the right nipple, anxiety, and cyanosis of lips, etc., the skin covered with perspiration. The pain had existed about a fortnight. The middle third of the right lung was somewhat duller than the rest. There were mucous and subcrepitant râles there; and a few moist râles at both apices and in other parts of the lungs. Percussion was painful under the right nipple. There was much albumen in the urine. Although the temperature never rose much, all her other symptoms were much aggravated, the pulse reached 160, her dyspnoea and cyanosis were greatly intensified, and on the morning of the 7th the death-agony began, which terminated at 2 A.M. next day. At the necropsy there was found diaphragmatic pleurisy. About eighteen ounces of serous fluid were between the lung and the diaphragm. It was encysted by soft and recent false membranes. At the base of the right lung there were numerous little pouches (four or five) beneath the pulmonary pleura, from the size of a nut to that of a pea. Incised, they gave exit to a greyish sanious pus, with little odour. The wall of each was formed of ragged ulcerated lung, in direct contiguity with the pus. The rest of this lobe had numerous nodules of disseminated lobular pneumonia. The left lung was congested, and little crepitant. This pleura had also a considerable effusion. The heart was healthy. The liver was congested and of enormous size, the spleen large and very friable. Lastly, a great part of the mucous membrane of the small intestine, and of Peyer's patches, which were unduly prominent, were greatly congested. The mesenteric

glands, however, were not enlarged. In spite of the albuminuria, the kidneys were perfectly healthy.

The interest of the case is not so much in the limited pleurisy which accompanied the gangrene of the lung, but in the form assumed by the latter. Instead of a large tract with extensive destruction of lung, we have a number of small and scattered excavations like metastatic abscesses. There were, besides, all through the affected lobe, numerous nodules of lobular pneumonia, thus resembling pulmonary infarction, though quite distinct from it. M. Bucquoy refers to a case reported by E. Boudet ('Recherches sur la Gangrène pulmonaire des Enfants,' in the *Archives Générales de Médecine*, 1843) in a child aged five, after measles, had gangrene of the mouth. He distinguishes nodular from circumscribed gangrene of the lungs. Dr. Walshe does the same. Dr. Stokes (*Dublin Quarterly Journal of Medical Science*, 1850) insists specially on one important feature of these cases of pleurisy with gangrene in the lung. He says, 'The pain in the side is always more intense in cases of gangrene of the lung than it is in ordinary pleurisy, and the extent to which the pleura is inflamed does not correspond to the amount of suffering.' In one of M. Bucquoy's cases, a medical pupil took cold, and died in eighteen days of gangrene of the lungs. He suffered intense pain during the first ten days, and all the time the only physical signs were slight dulness in the right infrascapular fossa, corresponding to a central gangrene of the lung. The peculiar fetor of the breath and sputa is seldom present at an early period—sometimes altogether absent. Dr. Stokes thinks it sometimes precedes.

Dr. Bucquoy thinks we may divide our cases of pulmonary gangrene into two great classes—viz., the pneumonic or pleuro-pneumonic form, and the pleuritic form. He attributes considerable value as a diagnostic symptom to the presence of blood in the sputa in considerable quantity. The typhoid nature of the symptoms from the first is also characteristic. He refers to Corbin ['Sur la gangrène superficielle du poulmon,' *Journal hebdomadaire de Médecine*, tom. vii. p. 126, 1830]. Corbin's division into deep and superficial gangrenes is really equivalent to the pneumonic and pleuritic forms. M. Bucquoy does not allow that we have clinical proofs of a primary gangrenous pleurisy; whilst, as regards the pleuritic form of pulmonary gangrene, he does not admit the causes usually assigned for its production. For besides local causes, such as inflammation, apoplexy of the lungs, infarctions, foreign bodies, and the like, many general debilitating causes have been specially mentioned; such as privations, disappointments, previous illnesses, and especially mental alienation (Guislain); alcoholism (Copland, W. Stokes); diabetes (Marchal de Calvi), etc. But in the acute form, none of these may be met with in the patient, as in the cases detailed. Some of them were attacked in the prime of life, and had robust constitutions. One cause is, however, common to a great many of them—that cause is extreme and prolonged cold. It was so in many of Dr. Stokes's cases. So it was in Professor D.'s case, exposed during his lectures to a strong draught of cold air, which led to an illness which long threatened to be fatal. It is not probable that the cold produces gangrene of the lung exactly as it does gangrene of external parts, as Grisolle supposes, on the strength of two cases by Shrimpton and Dubasc-Montfaucon (Inaugural thesis, 1847). It has sometimes seemed to be traumatic (case by Jackson in the *Archives Générales de Médecine*,

1853, and a case reported by M. Hayem last year). M. Bucquoy admits the difficulties of diagnosis ; and concludes with a warm recommendation of the tincture of eucalyptus in half-drachm doses, repeated frequently, as often tending to cure, and always tending to relieve the horrible fetor of the breath and sputa.

W. BATHURST WOODMAN.

GOLTZ ON VASO-DILATOR NERVES.

Goltz, with the co-operation of Drs. Frensenberg and Gergens (*Pflüger's Archiv*, Band xi. p. 52), has continued and extended his researches upon this subject (LONDON MEDICAL RECORD, December 16, 1874). Goltz explains the dilatation which occurs after section of nerves, not by a paralysis of vaso-constrictor nerves, but rather as the result of the stimulation of vaso-dilator fibres. In accordance with the results of Putzeys and Tarchanoff (*ibid.*), the author corrects a mistake in his previous observations, and agrees with these authors, that, in many cases, the effect of electrical and chemical stimulation of the sciatic nerve is at first to cause a contraction of the vessels of the foot, of short duration, before the very pronounced dilatation occurs. Goltz, however, does not accept the explanation of Putzeys and Tarchanoff. The method of experimenting is the following. The spinal cord of a strong young dog is divided in the lumbar region. After the wound has healed, both sciatic nerves are dissected out and divided, and a period of time is allowed to elapse till the elevated temperature of the hind limbs has begun to decrease somewhat. The idea of the author was, that if simple section of the sciatic nerve act as a stimulus, this stimulus may be perhaps greatly increased, by making methodically a large number of sections of the nerve. The result showed that the foot whose nerve was only once divided, was generally ten degrees cooler than the foot whose nerve was cut away or divided in repeated small discs. Powerful dogs, full-blooded and with good appetites, are required for these experiments. According to the author's hypothesis, repeated pinching or section of the nerve produces a stimulation of the vaso-dilator nerves. The vessels relax at the periphery, similar to the stoppage of the heart's action when the vagus is stimulated. When the vessels have relaxed, *i.e.* when their tonus disappears more and more, there is not necessarily a pronounced dilatation of the lumen of the vessels. This will only become clearly pronounced when there is sufficient blood to fill the relaxed vessels, corresponding to their diminished elasticity. The pronounced vascular dilatation, and the increase of temperature, will accordingly only occur when the general arterial blood-pressure is high and remains high.

What the author means by the term 'stimulation of vaso-dilator nerve-fibres,' is, that simple or repeated section of the nerves produces a peculiar change in the condition in the nerves, in consequence of which a something is propagated in the nerve, which causes a vascular dilatation in that area in which the peripheral expansion of the nerve takes place.

Hammering the nerves by means of Heidenhain's tetanometer, also produces a similar dilatation of the vessels of the feet, just like methodical pinching of the nerve.

A chemical stimulus, in the form of concentrated sulphuric acid, applied to the sciatic nerve of a

guinea-pig prepared as above, gave the same result, though the author could not be certain whether the foot of the stimulated leg became paler at the beginning of the stimulation than before it.

A very curious phenomenon was observed when the sciatic nerve of a kitten was stimulated by induced electricity, *viz.*, the foot began to sweat. The author, therefore, concludes that, in the sciatic nerve of the cat, fibres are present which supply the sweat-glands. Only in two cases, however, was this effect observed in dogs, who, as is well known, possess sweat glands in the pads of the feet [and also in the skin over the surface of the body generally.—*Rep.*] In many experiments a cooling, *i.e.*, constriction of the vessels of one leg, occurred, when in the other leg vascular dilatation was artificially produced. It is very probable, the author thinks, that the vascular constriction is not referable to an increased tonus, but is to be explained on purely physical grounds, by a sudden diminution of the resistance in the vessels of the other leg.

After simple or repeated section of the sciatic nerve in dogs, the author never observed that the dilatation of the vessels was preceded by contraction, although he remarks that if the contraction were sufficiently short it might elude observation. This contraction of the vessels after section of the spinal cord is well established for the frog.

From the rapidity with which the vascular tonus is re-established after section of the nerves, the author concludes that the tonus must be kept up by arrangements which lie beyond the great nerve-centres, probably in the vascular wall. The tonus was soon re-established in the vessels of the leg of the dog after section of both the sciatic and crural nerves. The author shows in another way that the tonus of the paralysed limb does not depend on the great nerve-centres.

Section of the spinal cord is capable of producing vascular dilatation, not only in the hinder but also in the anterior part of the body. The whole brachial plexus in a dog, on one side, was divided, and when the temperature of both fore-limbs had become nearly alike, generally in from seven to fourteen days, the spinal cord was divided between the thoracic and lumbar portions. There then occurred a considerable difference in the temperature of the two fore-feet, that of the paralysed side having become notably diminished. The temperature of the sound side rose or remained the same. From this it appears that injury to the spinal cord acts similarly both on the fore and hind parts of the body. According to the author, injury to the spinal cord cannot exercise any influence on the tonus of the vessels through nervous channels, the tonus being sustained by the hypothetical end-arrangements in the paralysed part, these being no longer influenced by nervous excitations proceeding from the great centres, still they may not be completely independent of the body. Every change in the blood-pressure in the aorta may alter the diameter of the vessels in the paralysed part ; and it seems to the author very probable that the tonus of the vessels of the paralysed side is increased by the sudden diminution of the blood-pressure acting locally on the isolated end-organs. In experiments where double section of the spinal cord was performed at long intervals, *e.g.*, first in the lumbar region, and then in the fore part of the thoracic region, it was found that the hind feet, immediately after the second section, became greatly cooled, while the fore feet became warmer. This

shows that, in an animal with divided spinal cord, the tonus of the vessels of the hind feet are governed from foci other than those of the fore feet. The peculiar reflex actions of the hind part of the body were influenced by the second section. The author thinks that this experiment supports the view that the cause of 'shock' is to be sought in 'inhibitory processes,' which are propagated in nervous channels.

The most pronounced vascular dilatation can be produced by placing the paralysed limb in a freezing mixture. When the foot is taken out of the mixture, its temperature is little short of that of the blood itself.

Variations in the temperature of the air of the room, however, produce extreme changes in the diameter of the vessels of the paralysed limbs. The tonus in the paralysed limb varies with a change in certain internal conditions—probably blood-pressure, the quantity of blood, temperature or change in the composition of the blood may influence it, but these the author has not sufficiently studied.

With regard to the end-arrangements in the sound limb, the author imagines that they are equivalent to the nervous arrangements upon which the activity of the excised heart depends; and, just as Volkmann maintained that the ganglionic cells are the immediate central organs for the cardiac movements, so are the hypothetical ganglionic cells in the walls of the vessels the immediate centres for the vascular tonus. In sound limbs, the activity of these end-arrangements can be powerfully influenced by the great nerve-centres.

The reasons why the author regards the vascular dilatation as a result due to stimulation, which must be explained by an increased activity of the divided nerve, are: (1) the vascular dilatation disappears tolerably rapidly, because the stimulus becomes exhausted; (2) repeated section of the peripheral end of the nerve increases the dilatation; (3) every other form of mechanical stimulation produces the same result; (4) continued chemical or electrical stimulation of the divided nerve always produces a degree of vascular dilatation which greatly exceeds that which is present before the stimulation.

Goltz is of opinion, that those cases where sometimes section of the sympathetic in the neck is not followed by its usual results, support his hypothesis. He also cites the division of the nervi erigentes, and one on which he lays more weight, viz., Vulpian's experiment of section of the lingual nerve being followed by dilatation of the vessels of the corresponding half of the tongue, and the increase of this dilatation on the peripheral end of the nerve being stimulated; and he also cites the same author's more recent experiment on section of the glossopharyngeal nerve having a similar action on the posterior part of the tongue (LONDON MEDICAL RECORD, November 15, 1875) as supporting his view.

The author concludes that the spinal cord is, undoubtedly, an independent reflex vaso-motor centre. It has, however, not been proved that this centre continually sends tonic excitations to the vaso-constrictor nerves. The dilatation of the vessels observed after injury to the spinal cord, and which is regarded as a consequence of the interrupted activity of this organ, is much more the result of the stimulation of vaso-dilator nerves.

WM. STIRLING, D.Sc., M.D.

ANATOMY AND PHYSIOLOGY.

ERB AND OTHERS ON THE REFLEX ACTIONS OF THE TENDONS.—Several papers have appeared upon this somewhat novel subject lately, including those of W. Erb (*Archiv für Psychiatrie*, Band v. p. 792), C. Westphal (*Ibid.* p. 803), and A. Joffroy (*Gazette Médicale de Paris*, nos. 33 and 35), all of which are reviewed in the *Centralblatt für die Medicinischen Wissenschaften*, no. 54, 1875. Erb noticed these reflex actions of tendons in the healthy subject, but more pronouncedly in many patients suffering from disease of the spinal cord. In the quadriceps, a prompt contraction of the whole muscle, resulting in powerful movement of the leg, is produced by gently touching the region of the ligamentum patellæ, when the knee and hip are slightly bent. The author calls this a 'patellar tendon-reflex,' and shows that it does not proceed from the skin, and can only arrive from the tendon and its direct continuation (no stimulation of the skin, no tapping the surrounding parts, can produce the reflex action), and that it is specially or exclusively the mechanical stimulus which discharges this reflex action. In a patient suffering probably from commencing sclerosis of the lateral columns, the author could produce not only reflex action of the patellar tendon, but reflex contractions could also be produced in a similar way, and in many other musculo-tendinous areas of the body, such as in the tendon of the triceps of the upper arm, and, most peculiar of all, in the tendo Achillis, when suddenly placed upon the stretch by rapidly flexing the foot dorsally. On continuing the pressure, clonic contractions occur; the foot, being flexed by the contraction of the tendo Achillis, is brought back by the continued passive dorsal flexion into the position in which the extension and therewith the stimulus to the contraction of the tendo Achillis occur. These clonic spasms are not caused to cease by sudden plantar flexion of the great toe (Brown-Séquard), when at the same time there is not a powerful flexion of the whole foot. Then the clonic spasms cease. The physiological and the pathological importance of these tendon-reflexes are only indicated by the author.

Westphal, like Erb, also observed the occurrence of the above described phenomena. The phenomena described by Erb as 'patellar tendon-reflex' is called by Westphal 'leg-phenomenon,' the clonic contractions of the foot caused, according to Erb, reflexly by stretching of the tendo Achillis, Westphal calls 'foot-phenomenon.' From a clinical point of view, Westphal noticed the foot-phenomenon in hemiplegics (not in quite healthy persons) at the earliest after the first week since the attack. In the later stages, its occurrence is almost to be regarded as the rule. It also occurs in spinal paraplegics, or in persons weak only in one lower limb from spinal disease, specially in those forms of paraplegia which are accompanied by continued rigidity of the entire muscular structure of the lower extremity. Westphal also regards the assertion of Brown-Séquard, that plantar flexion of the great toe is able to interrupt the clonic spasms, as erroneous, and explains the occurrence of the phenomenon caused by the plantar flexion of the whole foot. The foot-phenomenon is always wanting in the pronounced clinical conditions of tabes dorsalis. The leg-phenomenon generally occurs where the foot-phenomenon occurs; not unfrequently there are exceptions to this rule, only this

is certain that it is absent in all undoubted cases of tabes dorsalis. In grey degeneration of the posterior column, proved by pathological examination, both phenomena are absent, but are to be met with in the most different affections of the brain (embolism, tumour, hæmorrhage), and in the spinal cord in primary myelitis or that caused by disease of the vertebræ, when the grey substance is not too deeply involved, or large parts of the dorsal and lumbar portions of the spinal cord are not completely destroyed. Westphal is inclined to ascribe the *phenomena of the contraction* to a direct mechanical excitation of the corresponding muscles, by sudden stretching or vibration of the tendon, for one cannot explain the phenomena as produced reflexly through sensory muscular nerves, as long as the existence of such nerves is a subject of controversy, and with regard to reflex actions which result from tendons we up to the present know nothing. In the pathological cases the author believes that the continued abnormal condition of contraction of the quadriceps and of the muscles of the calf, which makes them more susceptible of mechanical stimuli, plays a certain part. The author, from his anatomico-pathological observations, is of opinion that a defect in the conduction of the lateral columns stands in causal connection with the phenomena.

According to Joffroy, the above-described phenomena are reflex, and they can be produced by actual muscular extension (which the author regards as of more importance for the occurrence of the phenomena than stimulation of the tendons), as well as by stimuli applied to the skin.

Drs. F. Schultze and P. Fürbringer, stimulated by the above publications, have also experimented upon this subject (*Centralblatt*, no. 54, 1875). The muscles of the thigh and leg of a rabbit were exposed, and tapping of the patellar tendon with a small hammer caused contraction of the right quadriceps and extension of the right foot, weak contractions in the left quadriceps, and irregular tremor of both extremities. After section of the right crural nerve the contraction of the right quadriceps ceased. Section of the left crural nerve was followed by the same result in the left leg. From these and experiments similar in kind with section of the cord at the level of the dorsal vertebræ, the authors arrive at the following conclusions. 1. The phenomena in question are not due to mechanical muscular contractions produced directly through the tendons. 2. They are rather to be ascribed to a reflex mechanism discharged by a mechanical stimulation of the tendons, the reflex path for the lower extremities being placed in the lower sections of the spinal cord. 3. Cutaneous reflex actions as described by Joffroy do not exist.

HERMANN ON ELECTRICAL STIMULATION OF THE CEREBRUM.—L. Hermann (*Pflüger's Archiv*, Band x., p. 77) upon repeating Hitzig's experiments, remarked that, notwithstanding the surface of the brain being exposed for hours together to the air, and also in spite of the surface becoming dry, still the results of the experiment were not affected thereby. The same result was obtained after the destruction (by the repeated application of acetic or nitric acid) of the 'centre,' previously exactly mapped out on the surface. The grey matter of the cerebrum was affected to one-third of its depth by the acid. The experiments were made on middle-sized dogs. The active area or 'centre' was found to be increased by increasing the strength of the current

(induced), though the constant current was also employed.

In all the other experiments a cork-borer of six or seven millimètres (about $\frac{1}{4}$ inch) in diameter was pushed into the brain to a depth of one to one and a half centimètres ($\frac{1}{4}$ to $\frac{1}{2}$ inch); the upper free surface of cylinder of brain-tissue thus produced was formed by the 'cortical centre.' On applying the stimulus (electrical), the results were the same; and even if the electrodes were sunk into the cavity, or placed in its walls, exactly the same results followed. The animals lived four or five weeks afterwards, and were employed for other purposes.

The 'area' was always mapped out by a minimal current. In some cases the 'area' was traversed by a small sulcus, in others not.

Hermann agrees with the other experimenters that electrical stimulation, by placing the electrodes upon certain convolutions, is followed by distinct movements; but he regards the conclusion, that motor centres lie at these spots, as quite unjustifiable. Further, the author observed in a dog, which lived for several weeks after the operation of extirpation of the so-called 'centre' for the right hind foot, similar phenomena, such as have been described by other experimenters (Duret and Carville); but it was distinguished by having perfect anaesthesia of both extremities of the right side, and incomplete anaesthesia of the left hind leg and the left side of the trunk.

GERLACH ON THE RELATION OF SULPH-INDIGOTATE OF SODA TO THE TISSUES OF THE LIVING BODY.—L. Gerlach, of Erlangen (*Centralblatt für die Medicinische Wissenschaften*, no. 48, 1875), adopted the method of saturating the tissues with this substance for days and even weeks together; the former experimenters, Heidenhain, Kupfer, Von Wittich, and Thoma, only injected such a quantity of indigo-carmin as remained in the body for a comparatively short time. The author injected indigo-carmin into the lymph-sac of several frogs, and killed them at intervals of two days, always renewing the injections. The microscopic examination showed that the white blood-corpuscles are capable of taking up indigo-carmin.

1. The first traces of this action appear on the third day after the introduction of the colouring matter. After this time, both the number of cells which contain the pigment and the quantity of pigment in the individual cells increase.

2. The cells of the connective tissue, e.g., of the tendons, take up the colouring matter. This is to be observed from the fourth day.

3. No indigo-pigment is deposited in the bone-cells.

4. The pigment is found in the cartilaginous tissue, e.g., the articular cartilage of the hip-joint, from the fifth day onwards. None is found in the ground-substance or matrix.

5. The nerve-cells never contain the indigo; only in a few cases was it found in the sympathetic ganglion-cells between the cell-contents and the sheath.

6. The blue colouration of the epithelial cement pointed out by Thoma and Küttner is also true for that of the so-called endothelium.

WM. STIRLING, D.Sc., M.D.

TAIT ON THE UMBILICAL CORD.—In the last volume (vol. xxiii. p. 498) of the *Proceedings of*

the *Royal Society* is an abstract of a note on the anatomy of the umbilical cord, by Mr. Lawson Tait, read before the Society on April 28, 1875. This structure is dealt with in the following sections. 1. External Form and Method of Growth. Experiment shows that the vein, and not the arteries as has hitherto been supposed, is the chief factor in the cause of the spiral twist. This twist must depend upon some mechanism at the foetal insertion. An unequal nutrition of the cord caused by the distribution of nutrient capillaries over its venous surface in a proportion of three to two on the arterial surface, would seem to result in a spiral. 2. The Covering of the Cord. The epithelial covering of a cord previously stained with hæmatoxylin, is seen to consist of a single layer of polygonal cells, resting upon a fibrillar matrix. On the surface are stomata, both spurious and true; the latter leading into the vast system of canals of which the proper system of the cord consists. 3. The Substance of the Cord. The canalicular tissue of the cord is divided longitudinally into three columns, the divisions between which are rendered visible by injection of the columns according to Recklinghausen's method. When empty, the canals, by collapse of their walls, have the appearance of fibrous tissue, but look like stellate cells when partly distended. This led to the erroneous description of stellate cells in a fibrous matrix. Oval nuclei are imbedded in the lacunar spaces of the canals. Injected fluid passes more freely in the direction from the fetus to the placenta than in the reverse way. During injection, minute streams of the fluid injected flow from the surface of the cord. These are not due to rents. Transverse and longitudinal sections show that the canals are stellate in every plane. The wandering cells are found in the alveoli between the canals. They are not constant, and are often more numerous in some parts of the cord than in others, but are most abundant near the umbilicus. They exhibit amoeboid movements, after being treated with litmus on a warm stage. No nerve-fibres have been detected in the cord. The canalicular tissue ends in three cones, one for each column of the cord, the apices being just within the dermal ring. The injection will not pass through the tendinous ring, but from the canalicular tissue into the capillaries of the cord. After injection of the capillary plexus running from the dermal ring, a peculiar vascular arrangement will be brought to light, in the centre of the cord, in the firm nucleated tissue forming the omphalic ring. The basis of this system is a sacculated sinus, excavated in the fibrous tissue, and having probably a spinal arrangement, as in one section it appears and disappears as only a screw would. It extends into the true substance of the cord, giving off at intervals branches which break up into capillaries, which latter do not form layers, but enter directly into the canalicular tissue. The sinus seems to originate from the small arteries of the anterior abdominal wall, which enter with the vein. There seems to be a very close analogy between this arrangement and that of the Haversian system in bone. 4. The Vessels of the Cord. Their outer layers have wider limits of contraction than the inner, the latter being thrown into folds resembling those of the contracted oesophagus, or the contraction of the arteries. One reason of this exceptional contractility is, that the fibres of the muscular tissue are arranged in bundles having a double spiral direction. The quality of the

blood traversing the vessels appears to govern this contraction, for the fibres contract as soon as the blood in them becomes arterial by the establishment of respiration, but relax again and pulsate if it becomes venous by a temporary arrest of respiration. This appears to be aided by the absence of an epithelial lining to the arteries. The closure of the vessels is affected immediately by clot, and afterwards by agency of the round migratory cells, which latter also share in the subsequent process of inflammatory ulceration and necrosis of the stump of the cord. 5. The relation of the Cord to the Placenta. Fluid cannot be injected from the substance of the former into the latter, for it is arrested by a firm membrane derived from the chorion, which the vessels of the cord penetrate, and between two layers of which they lie. There is no connection whatever between the nutrient system of the cord and that of the placenta. 6. The Nutrition of the Cord. The arrangement of the capillaries entering it from the fetus is the chief agent in its nutrition; but from what has been observed in cases of extra-uterine gestation, the stomata on the epithelial surface play an important part in its nutrition. From the substances which enter into its composition, we are tempted to conclude that the liquor amnii is a nutrient agent; for, in recent cases of extra-uterine foetation, before the fluid is absorbed, the cord remains plump, but shrivels after its absorption, though still, with the exception of the absence of the wandering cells, retaining its structural character. It is possible that the canalicular nuclei are able to keep the cord in repair, as it were, through the matters absorbed from the liquor amnii, as long as this lasts, very much as ivy continues to live after its connexion with the root has been severed; the analogy, indeed, between the cord and vegetable tissue is a very close one.

RANVIER ON THE MYOSPECTRUM.—In the *Centralblatt für die Medicinischen Wissenschaften*, October 23, 1875, is an abstract of two papers by Professor Ranvier on the spectrum produced by striated muscle, contributed to the *Comptes Rendus* (tome lxxviii. 1874), and the *Archives de Physiologie* (1874) respectively. The source of the spectrum depends upon physical causes similar to those which produce the so-called 'lattice (*Gitter*) spectra,' for the transverse striæ of the muscle have a physical action identical with that produced by delicate cross-bars scratched upon glass with a diamond. In order to have the means of seeing myospectra, one must proceed thus. From a muscle of a freshly killed animal, e.g. a frog or a rabbit, a regular group of primitive fasciculi must be isolated, and teased out upon a glass slide, without, however, the addition of any fluid reagent; care being taken that the primitive bundles are lying parallel. A thin glass cover is then laid over the preparation, and securely cemented with paraffin to guard against evaporation from and consequent drying up of the object. In order to observe the spectrum the room must be darkened, and a single pencil of light only be admitted through a slit in the shutter. The observer then holds the preparation close in front of his eye, having the primitive fasciculi so relatively disposed (*orientist*) that their longitudinal axes lie perpendicularly to the axis of the slit. There are then to be seen on each side of the slit, one, two, or three symmetrically arranged spectra, of which the first is brightest, but of the least extent. In order to avoid the trouble of preparing

fresh objects on every occasion, a preparation can be permanently put up in Canada balsam. The unstriated muscular fibres show no spectrum, nor has M. Ranvier yet succeeded in obtaining any from the muscular tissue of the heart. It is known that the extent of a 'Gitterspectrum' is limited by the number of lines, the spectrum being longer the greater the number of lines in a given space; hence it follows that the spectrum of a muscle is the longer the finer its transverse lineation is. Conversely, from the myospectrum the distance between the transverse striæ can be calculated, the spectrum being compared with that of a lattice of lines of known fineness, or, after that, empirically, by micro-metrical procedure, the corresponding distance of the transverse lines to a row of myospectra has been found out. If the living muscular tissue of a frog be tetanised, while the spectrum is still under observation, the latter will be seen to be extended, but never to disappear. Spectra were observed when a muscle was at rest, as well as in full action, and in intermediate stages of action. This tends to show that the statement of Merkel (*Centralblatt*, 1872, p. 453), that in the contraction of a muscle there is a 'homogeneous intermediate' stage (*Zwischenstadium*), is incorrect. M. Ranvier has even gone so far as to construct a 'myospectroscope.' J. C. GALTON.

BLOCH ON THE HIGHEST TEMPERATURE BEARABLE BY THE HAND.—No. 25 of the *Gazette Hebdomadaire* (June 12, 1875) states that Bloch investigated the highest temperatures which the hand could bear in baths of different substances for two minutes at a time, and the following are the results obtained:—

Substances.	Centigrade.	Fahrenheit.
Quicksilver	48°	118° 40'
Water	49°	120°
Solution of tannin . .	49°	120°
Vinegar	51°	123° 80'
Solution of sodium carbonate }	52°	125° 60'
Alcohol	51°	123° 80'
Milk	52°	125° 60'
Spirits of turpentine .	55°	131°
Glycerine	57°	134° 60'
Oil	60°	140°
Beef-suet	65°	149°

The reason that mercury and solution of tannin at low temperatures seem as hot as other things at higher temperatures, is, according to Bloch, the density of the former, and the rapid imbibition of the skin in the latter.

RANSOME AND PATCHETT ON THE POSITION OF THE HEART'S IMPULSE IN DIFFERENT POSITURES OF THE BODY.—In vol. ix. of the *Journal of Anatomy and Physiology*, Dr. Arthur Ransome publishes a number of observations, based upon chest-rule measurements [taken for him by Mr. W. A. Patchett, resident medical officer of the Manchester Workhouse Infirmary], the object of which is to ascertain the position of the 'apex-beat' of the heart, or, more properly, of the site of the cardiac impulse. The 'chest-rule,' invented by Dr. Ransome, has already been mentioned in our pages. It consists of a rectangular parallelogram, six inches long by three in width, and divided into eighteen squares of exactly one inch length of side, made of the finest spring steel. The statements of authors on the site of the heart's impulse vary greatly from one another. Quain and Sharpey, Sibson, Walshe,

Piorry, and others, are quoted to show this; and the cause is imputed to the difficulty of describing 'in words the extent to which the impulse gravitates downwards or slantwise, or from side to side; this can only be done satisfactorily by means of ordinate measurements, vertically down the central line of the sternum, and horizontally at right angles to this line.' The measurements referred to were taken from fifty-one persons not suffering from any known cardiac disease. The position on the chest-wall where the strongest beat of the heart was to be felt was marked with ink or coloured collodion; first in the recumbent, then in the sitting or standing position; then when lying on the left side; lastly, when on the right side. The latter was often doubtful, and is frequently omitted from the tables. After these points had been marked, 'it was easy to measure their ordinate distance, first along the vertical line down the centre of the sternum (x), and, second, along a line through the point at right angles to the vertical (y).' The measurements are given in detail in the tables, which are arranged according to the length of the sternum. As might be anticipated, the left nipple varies greatly in position. Thus, in those with a sternum of eight inches, the extreme vertical ordinates of this nipple were four and six and a half inches, and the horizontal ordinates varied from three to four and a half inches. 'The relation of the heart's impulse-site to the nipple, when supine, varied from immediately under the nipple to one or one and a half inch within it. Six out of the eight cases in which it was just under or in a line with the nipple, had either chronic bronchitis or phthisis,' and should therefore, probably, be excluded. The difference in the position of the heart's impulse-site is greater in changing position from side to side, than in changing from the lying to the upright position. In twenty of the fifty-one cases its level was the same in the upright and recumbent position. In the rest it varied from a quarter to one inch. In nine cases it was lowered a quarter of an inch; in twelve, half an inch; in three, three-quarters of an inch; and in three, one inch.

The size of the individual seems to make little difference. In 60 per cent. there was a small movement of the impulse to the left as the patient rose to the upright position, and in some instances this occurred even when there was no sinking in the level of the heart. The extent of this sidelong impulse varied from a quarter to one inch along the horizontal ordinate. 'The mean extent of the movement in the whole number of cases was about three and three-quarters inches, the maximum was five and three-quarters inches [? hypertrophy] and the minimum two inches.' [*Extent* probably means area of cardiac impulse.—*Rep.*] Dr. Ransome draws the very just conclusions that variations undoubtedly occur in the site of the heart's impulse, and that, 'in all observations, great care should be taken to place the patient in the same posture at each observation, otherwise most serious errors might easily be made.'

W. BATHURST WOODMAN.

WEGSCHEIDER ON NORMAL DIGESTION IN INFANTS.—In a pamphlet (*Ueber die normale Verdauung bei Säuglingen* (Hirschwald: Berlin). Wegscheider describes investigations conducted in Hoppe-Seyler's laboratory at Strassburg, which consisted in the chemical and microscopical examination of the dejections of healthy infants nourished exclu-

sively at the breast. The following are the results arrived at by the author.

1. The albuminous substances derived from the milk are completely absorbed. [In the text, the presence of traces of peptones is allowed.—*Ref.*]

2. The so-called 'milk-detritus' consists essentially of fat, associated probably with remains of intestinal epithelium. It is not undigested casein.

3. The absorption of fats is by no means so complete as that of albuminous substances. A part leaves the intestine, certainly, as soap; another part as free fatty acids; and, perhaps a third part as unchanged fat.

4. In reference to the bile-constituents, it is shown that, even in the first weeks of extra-uterine life, the conversion of the colouring matter (through reduction in the intestine) takes place; but, in addition to hydro-bilirubin, unchanged colouring matter is always distinctly present; later, however, its conversion appears to be complete. In slight derangements of the intestine, the presence of biliverdin was unmistakably recognised; produced perhaps by the greater acidity of the accompanying fæcal matter.

5. With regard to cholestearin, the proportions correspond completely to those which have been found in adults and in the foetus.

6. Of the intestinal ferments, only the diastatic and the fibrin-digesting ferment of the pancreas were found; the former in small quantity, the latter only in traces. No pepsin could be detected.

The most important of these results is probably that which relates to the constitution of the 'milk-detritus,' i.e. the white specks which commonly appear in the stools of infants, and which have been generally mistaken for undigested casein. The reactions may therefore be acceptable. On examination they were found insoluble in water, in acids, and in alkalies. On the contrary, when treated with ether and alcohol, only a minute portion remained behind. This, on the addition of soda, did not dissolve, but swelled up, and was converted into a clear transparent mass, without definite structure.

RALPH W. LEFTWICH, M.D.

OTT ON THE ACTION OF LYCOCTONIA.—This vegetable principle is found in the *Aconitum lycoctonum*, and an account of some experiments made upon it by Dr. Isaac Ott, of Philadelphia, is given in the *Philadelphia Medical Times* of Oct. 16. He says, with a dose of '005 to '06 gramme subcutaneously in frogs, sensibility remained intact, the spinal cord appeared not directly affected, the motor nerves were paralysed, muscles excitable, pupil contracted, disappearance of respiratory movements, heart beating for a very long time after the absence of every sign of life. In the majority of cases he found the motor nerves completely non-irritable, but in some frogs, without regard to species, and even in the same species, the motor nerves were not completely paralysed. As to its effects upon the circulation, it was found that immediately after its injection into rabbits the pulse waves were considerably greater and steeper. In small doses, like aconitia, its action on the heart causes a delirium cordis, that is, periods when the pulse is greatly slowed whilst the pressure rises and falls in a manner not to be predicted. In larger doses there is reduction of both the pulse and the blood-pressure. The vagi are not paralysed by small doses, while they are so affected by large ones. The following are the conclusions

arrived at. 1. *Lycoctonia* is a weaker toxicant than aconitia. 2. It kills mainly through the respiratory apparatus. 3. It paralyses the motor nerves. 4. It does not affect the sensory nerves, spinal cord, or the striated muscles. 5. It reduces the blood pressure and pulse without any previous rise of the former as produced by aconitia. 6. The decreased pulse-rate and pressure are due to any action on the intercardiac nervous apparatus. 7. The pneumo-gastrics are paralysed only by large doses. 8. The delirium cordis produced by small doses is due to a change in the mechanism of the nervous apparatus of the heart. J. MILNER FOTHERGILL, M.D.

RECENT PAPERS.

- The Minute Structure of the Olfactory Bulbs. By Dr. C. Golgi. (*Rivista Sperimentale di Freniatria e di Medicina Legale*, Anno i. Fasc. 6.)
 Improved Method of Applying the Micro-spectroscopic Test for Blood-Stains. By Dr. J. G. Richardson. (*Philadelphia Medical Times*, November 13.)
 The Mechanism of the Shoulder-Joint. By Dr. O. H. Allis. (*Ibid.* December 11.)
 Proof of the Existence of Sugar in the Blood of a Healthy Man. By Dr. C. A. Ewald. (*Berliner Klinische Wochenschrift*, December 20 and 25.)
 Influence of Carbonic Oxide on the Duration of Muscular Contractility. By M. M. Rochefontaine. (*Gazette Médicale de Paris*, December 11.)
 The Mechanism of the Action of Quinine on the Circulating System, and its Action on Muscular Fibre in General. By Dr. V. Chirone. (*Lo Sperimentale*, vol. xxxvi, 1875.)
 Division of the Nuclei of Epithelial Cells. By W. Mayzel. (*Centralblatt für die Medicinischen Wissenschaften*, November 20.)
 On the Cohesion of Bones. By A. Rauber. (*Ibid.* November 27.)
 The Action of Acinarin. By Dr. H. Kohler. (*Ibid.* November 27 and December 4.)
 The Colour of the Macula Lutea in the Human Eye. By Dr. Hermann Schmidt. (*Ibid.* December 5.)
 On the Lymph Spaces of the Liver. By Herr von Wittich. (*Ibid.* December 12.)
 The Formation of Urea. By E. Salkowski. (*Ibid.* December 12.)
 On the Urogenital System of Mammalia, explained through that of the Plagiostomes. By C. Sarpen. (*Ibid.* December 19 and 26.)
 The Function of the Membrana Fenestræ Rotundæ. By Dr. Weber-Liel. (*Ibid.* January 8.)

PATHOLOGY.

SATTERTHWAITE ON BACTERIA: THEIR NATURE AND RELATION TO DISEASE.—Dr. Thomas E. Satterthwaite has a paper on the above subject (*New York Medical Record*, Dec. 18 and 25, 1875).

After reviewing the various views of authorities on the nature of bacteria, Dr. Satterthwaite gives details of several experiments performed by himself and Dr. Curtis. The results at which they arrived as to the nature of bacteria and the properties of putrid matter he states as follows. 1. Putrid matter, when introduced into the system, is capable of producing a well-marked train of symptoms, which are extraordinarily like those generally known as sepsis. 2. The poisonous quality does not reside in the absolutely clear liquid, when entirely freed from granules. 3. The poison is sometimes separated by coarse methods of filtration, that is, through common filter paper, though on this point the results were not sufficiently uniform to establish certain conclusions. 4. Continued boiling and evaporation to dryness will

not destroy the poison. 5. Continued boiling and evaporation to dryness, and boiling with absolute alcohol, will not destroy the poison. 6. The dry alcoholic extract, freed of alcohol by evaporation with heat, was poisonous. (The liquid alcoholic extract furnished uncertain results.) So far as this experiment may be relied upon to show the albuminous nature of the poisons it is uncertain, for where the alcoholic precipitate (in which doubtless the albumen would be) produced poisonous results, it still remains uncertain whether the liquid alcoholic extract was poisonous or not. 7. Of putrid matter which, after several filtrations, was boiled down to dryness, then boiled with absolute alcohol, again dried and extracted with water, the filtrate was poisonous. 8. This aqueous extract failed in a number of instances to produce bacteria, under circumstances favourable to the development of bacteria; and hence the granules, which are the bodies most likely to represent the poisonous principles, appear not to be bacteria or their spores.

Dr. Satterthwaite then proceeds to review the arguments brought forward in favour of the germ theory in its application to various affections, and narrates some experiments by Dr. Edward Curtis and himself with regard to the effect of salicylic acid on the poisonous action of putrid substances. They found that salicylic acid in the proportion of 1 to 100 with a little phosphate and soda as a solvent, and carbolic acid of the same strength, have, each of them, the power of preventing the formation of bacteria for a period of two months at least. This power of salicylic acid was then utilised, to determine whether it would also prevent infection if mixed in a concentrated form with such poisonous matter as tongue-scrappings. It was found not to have any effect upon the matter, and the lesions, though without bacteria, appeared as usual. These experiments, says Dr. Satterthwaite, suggest that salicylic acid and carbolic acid, while excellent preservatives and antimiticophytics, are perhaps not disinfectants at all in the strict sense of the term.

The following are the general conclusions at which Dr. Satterthwaite feels warranted in arriving.

1. Bacteria are certain vegetable organisms which belong probably to the algæ; they are found abundantly in nature, but chiefly where there is moisture.
2. They exist in the body in health, covering the mucous membranes from the mouth to the anus, and sometimes appear to penetrate a certain distance into the system, without causing symptoms of disease.
3. They also exist in putrefying fluids, and in various diseased processes, occurring in hot and cold abscesses, in the blebs of erysipelas, and in simple blisters.
4. It is doubtful whether the virulent principle of infective disease is albuminous.
5. This principle does not reside in the perfectly clear fluid which passes through porous clay. In putrid infectious fluids, this appears to be certain. The poison is rendered less virulent by repeated filtrations through common filter-paper.
6. The virulent principle may be boiled for hours, filtered numbers of times in the ordinary way, boiled with alcohol, and again filtered and dried, and yet the watery extract of such a dry residue will produce septic symptoms. It is therefore soluble, or at least suspended in water.
7. The liquid, which is thus poisonous, may be clear to the eye, but contains granules under the microscope.
8. These granules have not produced bacteria in a number of instances when they are placed in a suit-

able condition to do so. 9. We cannot, therefore, feel that satisfactory evidence has been brought forward to show that in any of the diseases or processes enumerated (anthrax, or carbuncular diseases of the French, sheep-pox, small-pox, typhoid and relapsing fever, etc.) minute organisms are the sole and sufficient causes of disease.

W. DOUGLAS HEMMING.

DRAKE ON DIAPHRAGMATIC HERNIA AND INTESTINAL PERFORATION.—At a meeting of the New York Pathological Society, on September 22 (*Medical and Surgical Reporter*, October 16), Dr. F. R. S. Drake presented a specimen of ulceration of the intestine, and protrusion of the omentum through the diaphragm, with the following history. A mason, aged forty-two, had been knocked down two years ago, while he was working, forcibly flexing his knees against the chest; after that he vomited blood several times, and complained of pain on a line with the lower border of the ribs, on the left side. He was received into a hospital, where he remained four months; after this, he could perform light work only. On August 24, while at work, he was seized with griping pains, and on the 27th was admitted to Charity Hospital. The abdomen was distended with gas, but no tenderness on pressure at any point; the bowels were constipated; pulse normal, and no fever. He remained in this condition for three days. On August 31, he was taken with nausea and vomiting, and complained of intense pain in the left hypochondrium, shooting to the right iliac fossa; the tympanites increased. He died on September 2. At the necropsy the intestines were found matted together, and covered by a fibrinous exudation. The abdominal cavity contained a large amount of faecal matter. A portion of the omentum had protruded through the diaphragm into the pleural cavity, and had become strangulated. The intestine had been intensely congested above the constriction, while ulceration and perforation of its coats existed below. The pleural cavity contained four ounces of fluid.

RODGERS ON A SUPPOSED TESTICLE REMOVED FROM THE VAGINA OF A HERMAPHRODITE.—Dr. L. Rodgers reports in the *Cincinnati Lancet and Observer*, for September, the case of an unmarried woman, aged thirty-eight, from whose vagina a tumour was removed, which was afterwards found to present all the natural characteristic constituents of a testicle. The individual in question was hermaphroditic, and is described as follows. She is of medium size, weighing one hundred and thirty pounds; her voice is quite husky, resembling that of a man; sallow complexion; face is devoid of hair. The mammary glands are absent, while the breast is thickly set with hair. The mons Veneris is thickly covered with hair, the labia majora and minora are well developed, and the vaginal orifice is comparatively small, scarcely admitting the introduction of a female catheter. The clitoris is absent, and occupying its position is a fully developed penis, excepting the absence of a prepuce. The penis, in the flaccid state, would measure about three inches in length and one in thickness. It is, however, curved downward, there being a web-like membrane extending from the glans to the upper junction of the labia majora, along the under side of the penis. This membrane is about a line in thickness, and arises from the root of the penis like a round cord, and then

spreads out like a fan, being attached as above stated. The patient stated that when the penis becomes erect this fan-like membrane draws the penis down, with the glans pointing toward the vaginal orifice. The tumour was attached by a long pedicle to the root of the penis.

RECENT PAPERS.

- Bacteria: their Nature, and Relation to Disease. By Dr. T. E. Satterthwaite. (*New York Medical Record*, December 18.)
- On Inflammation. By Dr. G. [Thin. (*Edinburgh Medical Journal*, November and December 1875, January 1876.)
- A Ready Method of Preparing Sections of Diseased Tissues for the Microscope. By Dr. J. Stevenson. (*Ibid.* January.)
- Tumour of the Dura Mater. By Dr. F. Moinet. (*Ibid.* January, 1876.)
- Cases of Congenital Fistula of the Neck. By J. Mygge. (*Ugeskrift for Læger*, September 6.)
- On the Condition of the Spinal Cord and the Roots of the Spinal Nerves in Acute Basilar Meningitis. By Dr. P. Schultze. (*Berliner Klinische Wochenschrift*, January 1.)
- On Pulmonary Gangrene. By M. Bucquoy. (*La France Médicale*, December 25.)
- On Localisation in Cerebral Diseases. By Dr. Landolt. (*Le Progrès Médical*, December 25.)
- Purulent Collection encysted between the Liver and the Diaphragm. By M. Rendu. (*Lyon Médical*, December 26.)
- Cancer of the Kidney. By M. Béhier. (*L'Union Médicale*, November 30.)
- Report of a Case of Hydatids of the Liver. By Dr. Byrom Bramwell. (*Edinburgh Medical Journal*, December 1875.)
- On Localisation in Cerebral Diseases. By M. Charcot. (*Le Progrès Médical*, December 4.)
- Symptoms of Cancer erroneously referred to a Chronic Traumatic Peritonitis. By M. Tomlin. (*Gazette des Hôpitaux*, December 14.)
- A Case of Lesion of the Median Nerve with reference to the Distribution of that Nerve. By Dr. Webber. (*Boston Med. and Surg. Journal*, December 2.)
- On Pulmonary Gangrene. By M. Bucquoy. (*Le Progrès Médicale*, December 18.)
- Two Cases of Hydrophobia. By M. M. Jonas and Constantine Paul. (*La France Médicale*, December 18.)
- Enormous Gluteal and Intrapelvic Fibroma adhering to the Coccyx in a Man, superior Prolongation in the Concavity of the Sacrum, flattening of the Rectum. By Dr. Gillette. (*L'Union Médicale*, December 7.)

MEDICINE.

LEHMANN AND DEVENTER ON ULCERATIVE ENDO-ARTERITIS OF THE PULMONARY ARTERY.—Upwards of six columns of No. 49 of the *Berliner Klinische Wochenschrift* (December 6, 1875) are filled with notes and remarks on the following case. The authors (Dr. W. L. Lehmann and J. Van Deventer, of Amsterdam) justly remark that ulcerative endocarditis has hitherto been almost exclusively observed in the left heart, especially on the semilunar valves of the aorta. This case occurred exclusively in the pulmonary valves. The patient, L. G. Lippenga, was forty-six years of age. He was a day labourer, and was admitted on March 21, 1875, into Professor Hertz's wards. He had enjoyed good health, and dated his present illness from eight or nine days before admission. It began with a rigor and severe pain in the side. He was feverish, had much dyspnoea, and expectorated rusty sputa. On admission he presented the physical signs of an acute croupous pneumonia of the right lower lobe undergoing resolution. The spleen was slightly enlarged. There were no other symptoms. His pulse was 88, and his temperature only 38.5°C. (101.3°F.)

A favourable prognosis seemed justified; and, in fact, on March 26 his temperature was normal, the dulness had considerably decreased, and high-pitched vesicular breathing, with copious moist crepitus, was heard. The patient felt well, his appetite was good, and he seemed on the point of recovery. After four or five days a relapse set in. His temperature reached the former point in the evening, whilst it remained normal in the morning. He had a teasing dry cough, and on April 2 pleuritic exudation was diagnosed on the right side. By April 10 the line of dulness reached the third vertebra behind and the fourth in front. The morning temperatures varied from 99.5° to 100.1° F., and the evening from 100.4° to 101.4°. Pulse 80 to 90. Respirations 45 to 48 in a minute. The urine appeared normal. On account of great dyspnoea (R. 56 per minute), about 600 c.c. (= 21 oz.) of thick, purulent, offensive pus were removed by Dieulafoy's aspirator. Febrile symptoms supervened, and on April 15 the dulness was even greater than before. On the 17th paracentesis was repeated, for urgent dyspnoea. Only about 4 oz. of pus escaped, though the cannula was pervious and moved freely in the pleural cavity. From this time he declined visibly, though his temperature did not exceed 102.2°. He had no rigors, and died on April 21 with symptoms of collapse, without presenting any objective or subjective signs of any cardiac affection. At the *post mortem* examination there were firm adhesions of the pleurae on both sides. There was nothing special in the left lung. The right lung was extremely collapsed. The space between the lower edge of this and the diaphragm was filled with yellow purulent fluid smelling like garlic (about 1,200 cc. = 42 oz. nearly). This space was divided into two by a vertical fold of the thickened pleura, which ran the whole length of the thorax. This accounted for the failure in the second puncture. The heart was slightly displaced to the left. The heart was somewhat hypertrophied, especially on the right side. Except a little brownish fluid in the pericardium, that membrane was normal. All the valves were competent, so far as could be tested by pouring in water. The aorta and its valves were normal. The pulmonary artery was for the most part obstructed by conical fibrinous plugs, of which there were five altogether, attached to the pulmonary valves, and extending into the vessel. The largest of these clots was one inch long, one-third of an inch wide where adherent, and about half an inch at the top. The semilunar valves preserved their form, but were rough, and the edges and fine surfaces were so ulcerated as to be transparent in many spots. The tissue was very fragile and rotten. The inner coat of the pulmonary artery showed, in the neighbourhood of the valves, equally distinct greyish-red ulcers, with sharp, white, undermined edges. Beyond this there was smutty-brown staining. There were some thrombi in the vessels of the left lung, which was greatly congested. In the bronchi of the collapsed [right] lung there was some pus. The spleen was somewhat enlarged. The liver enlarged and nutmeg-like. The remainder of the organs presented nothing very remarkable, though the brain was rather soft, and the kidneys congested. There was an infiltration of pus-cells or lymphoid elements through the whole thickness of the pulmonary valves when examined by the microscope. The cells of the inner coat were partly swollen [by imbibition?], whilst many had undergone fatty degeneration. Some of the cells were embedded in

fibrinous threads connected with the coagula. There were also, close to the coagula, heaps of globular, highly refractive, but for the most part very minute, bodies, which exhibited no movements. The pus-cells in the clots and valves were filled with these little bodies, and thus had the appearance of compound granule-cells. Reagents and colouring materials affected them little, nor could it be clearly made out that they increased in number. The muscular structure of the heart had undergone considerable fatty degeneration in many parts. Other portions exhibited brown induration. The pericardium and the rest of the endocardium were healthy. A few of the little bodies named above were found in the blood, and a great many in the fluid in the pleural cavity. Similar corpuscles were found in the tubuli uriniferi. The case was thus one of pyothorax, or empyema, with ulcerative endocarditis of the pulmonary artery only. This is extremely rare. Indeed, the right heart is seldom attacked. Sperling (*Ueber Embolien bei Endocarditis*, Berlin, 1872, and Schmidt's *Fahrbücher*, 1873, Bd. 159) has collected all the cases which occurred in the Pathological Anatomy Institute at Berlin from 1868 to 1870, and amongst 300 cases found only three affecting the right heart. Virchow (*Ueber Chlorose und Endocarditis puerperalis*, Berlin, 1872, p. 18) says that 'Endocarditis almost invariably affects the left heart—generally the mitral valve, then the aortic orifice, or both together, sometimes the tricuspid. The pulmonary artery seems altogether to escape.' In this case no symptoms in life pointed to the valvular disease. There was fever, but never over 104° Fahrenheit. Nor was there any sudden rise of temperature. The spleen was enlarged; but this is common amongst labourers in Amsterdam. There was never any abnormal bruit; on the contrary, the heart sounds were clear all through. However, the absence of cardiac symptoms is not uncommon in these cases. [Rud. Meyer, *Habilitationschrift*, Zürich, 1870; Virchow and Hirsch, 1871, ii. p. 92.] As, for example, in the cases by Eberth, of Zurich, and Maier at Freiburg [Virchow's *Archiv*, Band 57, p. 228, and Band 62, p. 145]. The small, highly refractive bodies were probably micrococci, monads, &c., or they may have been organic detritus. The differential diagnosis between the two is often very difficult, as mentioned by Dr. Arnold Hiller [Virchow's *Archiv*, Bd. 62, p. 361]. In this case there was no coloration by iodine. It is much to be desired that some fresh aid to the detection of vegetable organisms may shortly be discovered.

W. BATHURST WOODMAN.

CRAWFORD ON A CASE OF CONSTRICTION OF THE COLON BY A WOUND IN THE DIAPHRAGM: SUBSEQUENT DEATH FROM OBSTRUCTION.—Dr. Crawford relates the following case in the report of the Lycoming County Medical Society (*Transactions of the Medical Society of the State of Pennsylvania*, vol. x. part vi.)

On October 7, 1874, Dr. T. Lyon and Dr. Crawford were called to see Mr. —, aged thirty-one, a man of fine physical appearance and general good health. On September 7, while at a friend's house, he ate very freely of grapes. That same evening he was attacked with violent colic, preceded by a chill and followed by fever, vomiting, and abdominal tenderness. The ordinary remedies for such cases were used by his attending physician, but afforded no relief. After a few days his condition became

alarming, and his family, living at Philadelphia, were notified. They came and brought their family physician, a homœopath. He stayed a few days, and while there had the entire control of the case. He left, assuring the friends the patient would be well in a few days; said he had been too strongly medicated. The patient had a quick, wiry, and weak pulse, furred tongue, tympanites of the bowels, and complained of nausea and great thirst. While examining the abdomen, a cicatrix was observed over the lower region of the left lung, the result of a stab he received twenty-one months before, and from which, it was said, he made a rapid recovery.

After his recovery from the wound, he was actively engaged in superintending a planing mill, and had no sickness till his present attack, except occasional colic, which yielded to the ordinary remedies. The diagnosis of the case was mechanical obstruction of the bowels, and, there being no stercoraceous vomiting, the obstruction was considered to be high up.

The treatment consisted of tonics, stimulants, and essence of beef, to sustain his failing strength; anodynes, to allay pain; and the injection of large quantities of tepid water, to overcome the obstruction. A long gum tube was introduced a considerable distance up his bowels, and repeated injections were used, yet nothing but water and mucus came away. He died on the night of October 8.

At the necropsy on the 9th, the peritoneum and a large portion of the intestines were found to be in a state of gangrene. The wound he had received twenty-one months before had passed through the cartilage of the eighth rib, entering the cavity of the chest, and had passed through the diaphragm to the left of the œsophageal opening, leaving a wound about one inch and a quarter long, through which quite a large loop of the transverse colon had passed, pushing up the lower part of the left lung and also the pericardium, to both of which the intestine was firmly adherent, also to the convex surface of the diaphragm. Eating the large quantity of grapes, the seeds of which could not pass the constriction, doubtless was the exciting cause of death.

ROSENBACH ON GRASS-GREEN SPUTUM.—No. 48 of the *Berliner Klinische Wochenschrift* for 1875 (November 29) contains a paper by Dr. Ottomar Rosenbach, of Jena, on what he calls 'a new variety' of grass-green sputum. He considers it to be totally different from that described by Traube (see Nothnagel's paper on green sputa in the same journal, No. 27 for 1864). The present sample was expectorated by a patient suffering from bronchial asthma with typical attacks of orthopnoea. After these attacks an immense number of pointed octahedral crystals were always found in the sputum, such as Leyden describes. Some of these crystals, on standing, had on previous occasions shown a slight tinge of green. This time the colour was first observed after standing twenty-four hours in a glass. The original colour was greyish-white, and the sputum was muco-purulent. Its reaction was neutral. Microscopically, the purulent masses were found free from colour, and the coloured fluid was found to consist of solitary spores, and larger conglomerations of small granules, refracting light strongly, apparently heaps of sporules. The outline of these masses was circular, the size varied a good deal. Acids, alcohol, and ether did not affect them. Caustic alkali deepened the colour. Some of the mucus,

pus, and epithelium cells exhibited minute granules, which resisted the reagents which broke up the cells. The fluid contained numerous and active vibrios. Some of the green sporules were successfully grown in milk, and in some phthisical sputa. Further attempts of the same kind on another occasion were less successful. [Some years ago, Dr. Barnes drew attention to the occurrence of green cryptogams (algæ or confervæ) in London milk, from the water used to dilute it or wash the cans—a probable source for the organisms noted above.—*Rep.*] W. BATHURST WOODMAN.

MORRISON ON THE USE OF ATROPIA IN OPIUM-POISONING IN AN INFANT.—Dr. S. W. Morrison writes in the *Philadelphia Medical Times*, November 27, that he was called on October 16, 1875, 5 P.M., to see an infant, aged four weeks, who had been given an indefinite amount of laudanum at about 10 A.M. of the same day. He found the pupils insensible to light; the breathing, nine respirations per minute; the extremities cold, and the child altogether insensible. The energetic slapping of its face with cold wet cloths also failed to arouse it. One drop of fluid extract of belladonna (Tilden's) was then given with a little aromatic spirits ammonia and brandy, and in a short time afterwards an electro-magnetic machine was made to operate on the child with all its strength, but without arousing it in the least. At 6 P.M., about forty minutes after giving the first drop of belladonna, thinking the child was about to die, he gave two drops more of belladonna, with more brandy and ammonia, and continued the electric currents. At 6.15 P.M., the battery began to arouse the infant, and he found its pupils soon after respond to light. Its recovery was then rapid and complete.

VOGL ON TYPHUS.—Dr. A. Vogl, army-surgeon in Munich, in a paper in the *Aerztliches Intelligenz-Blatt* for October, makes some remarks on typhus fever treated by cold water when the temperature had reached 39.5° Cent. (103.1° Fahr.) In the course of two years, fifty cases, as he says, came under his observation, and of these seven died, or 14 per cent., a mortality by no means favourable to the cold-water treatment in typhus, supposing, which we shall presently show to be very doubtful, that all, or even any of his cases, were typhus at all. Dr. Vogl paid particular attention to the temperature, and he found, what has been found by other German observers, that the temperature in fever does not, as is too often supposed, rise gradually to a maximum height in the evening and then fall to a minimum in the morning, an idea derived from the misleading practice of taking only morning and evening temperatures, but that the temperature in twenty-four hours forms a wave with two or more points or maxima (*Gipfels*) with corresponding depressions. In double-pointed waves (*Zweigipfligen Wellen*) the higher point was reached at 6 P.M., the lower occurred at 10 P.M. In three-pointed waves (*Dreigipfligen Wellen*) one height was reached at 10 or 12 in the morning, the second about 1 or 2 P.M. and the third or highest point (*Spitze*) at 6 P.M. In four-pointed waves the maxima were reached at noon, 2 P.M., 6 P.M., and 10 P.M., the highest point of all being attained at 6 P.M. The daily minimum was found to occur at 8 A.M. Dr. Vogel divides his cases into four groups. 1. Cases in which the crisis took place about the seventh to the ninth day; 2. Cases in which it took place on the fourteenth day; 3. Cases in which it was delayed until the

end of the third week; and 4. Fatal cases. The average temperature of all the cases, the average maximum temperature, the average remission, the absolutely highest temperature, and the absolutely lowest, are all given, with what useful object the present reporter fails to see.

This paper of Dr. Vogl's, however, is chiefly useful as showing the loose and inaccurate manner in which the word typhus is still in many quarters applied. Fifty cases of illness are somehow described in the article of which we speak, and they are called typhus; but in the notes supplied as an appendix, in no single case is there any mention of the well-known typhus eruption. In short, enteric fever, pneumonia, febricula, and, perhaps, typhus and other acute diseases, appear to be mixed up indiscriminately together. In proof of our assertion, we translate the notes of a few of the cases as follows.

1. For the first four days a high temperature of from 40° to 40.4° Cent. (104° to 104.72° Fahr.), which afterwards became more moderate, and fell on the seventh day. Pulse 104 to 120 on the first four days, then 84, on the appearance of defervescence 66. Great weakness; labial herpes on the sixth day.

2. High temperature for three days; fall on the seventh. Pulse for three days 100, then 84—92 up to defervescence; great general weakness; predominating lung-affection, especially on the right side.

3. In the first day, subcontinuous fever with exacerbations of from 40° to 40.8° Cent. (104° to 105.45° Fahr.) on the tenth day; on the last-named day the exacerbations and remissions fell; and on the twenty-first day collapse through peritonitis set in, and on the twenty-sixth day death occurred. Pulse 102 to 128.

4. Typhus on the seventh day of the fastigium interrupted by cholera. After two days' illness commencement of the acme on April 1; maximum of 40.8° Cent. (105.45° Fahr.) reached on the first day; type remitting, two-pointed curve; on the third day enlargement of the spleen was established; meteorismus, a few rose spots; slight bronchial affection, no delirium, great restlessness, three stools daily. On the fourth day restlessness, no delirium, erythema on the left trochanter region, increase of spleen. Pulse, from the first to the seventh day inclusive, 96 to 108. On the seventh day evening exacerbation of 40.1° Cent. (104.18° Fahr.) Pulse 96. Bronchial affection (muriate of quinine internally). During the night of the eighth day an attack of cholera with diarrhoea and vomiting, collapse, thready pulse, voicelessness, rose spots pale. On the ninth day continued diarrhoea, temperature 35.6° Cent. (96.08° Fahr.), suppression of urine, pulselessness up to the eleventh day after suppression of urine for sixty-two hours. *Post mortem* appearances corresponding to the algid stage of cholera; everywhere numerous typhus (*sic*) ulcers in the ileum with bloody edges, one of which had perforated the intestine, but was attached by the edges to the neighbouring intestinal wall.

ALEX. COLLIE, M.D.

ANDREWS ON FUNCTIONAL DISEASES OF THE HEART.—In the *Detroit Review of Medicine* for October is an original communication from Dr. Andrews on this subject. After reviewing the nerve-supply of the heart in all its bearings, he says:

From our present knowledge of the relations

between the heart and general organism, through the nervous system, it is easy to see how functional disorder may arise and become permanent without any recognisable lesion, or may be the precursor of grave organic change. The explanation of the frequency of nervous derangement of the heart's action in valvular disease, is also readily made through the morbid impressions transmitted from the brain when the blood becomes deteriorated. The general nervous excitability, often concomitant with inorganic disturbance, may be traced to the same origin. We may practically group these cases into three divisions, sufficiently distinct in phenomena to be easily separable, but at the same time probably dependent upon similar departures from the physiological state. Moreover, we may find in the same individual at different periods the symptoms characterising each of the states, and proving that in some instances the three divisions are the various stages of a progressive morbid condition. Many cases, however, could be cited where the characteristics of each class occur alone, with no previous or subsequent history of change of type.

The first of these groups presents cases mild in character, usually of recent origin, almost always in persons who have much overtaken themselves habitually, and where the blood has suffered rapid deterioration, it may be without much loss of body weight; or in those of feeble habit, who have been suddenly called on for severe mental or physical labour. This type is well illustrated among chlorotic patients and females of spare delicate habit, who are liable to sudden severe demands through their social relations. Females furnish by far the larger number of cases of this kind, though we may here include the form of functional disease first recognised and thoroughly analysed by Professor J. M. Da Costa, and occurring among soldiers most commonly, though also observed among miners, and, rather rarely, other mechanical workers; and among these cases we find instances where the disease assumes a severe character, and is attended by constitutional disturbance. The majority of cases comprised in this group are cured or much benefited by treatment.

The second division consists largely of cases in whom the phenomena just described have become chronic. The blood has become seriously impoverished through malnutrition, dependent upon some constitutional vice, or bad hygienic surroundings; generally the nervous centres, suffering also, show in various directions perversion of function, and the persons affected in this manner present a great variety of distressing symptoms referable to the general disorder.

In the third division may be included all those cases where indications of organic cardiac change are manifest, in connection with functional disturbance, either directly or remotely consequent upon this state; not referring those cases of cardiac disease to this class which have their origin in any inflammatory affection, but only those that arise in the obscure nutritional changes that usually manifest themselves first in nervous disturbances, but at length involve the blood so much that its impoverished state is unmistakable. The most common instances are those where long-continued malnutrition causes a tendency to fatty change, a lesion from which the heart most readily suffers, and which is soon followed by dilatation, and not unfrequently valvular disorders, directly due to weakening of the

muscular structures by the fatty substitution. Generally the organic changes are preceded by functional derangement of various kinds, which call the patient's attention and give rise to grave alarm. The physician is apt to regard this as unfounded; but he should bear in mind the danger of organic change where the assimilative powers are for a long time seriously impaired. It will be seen at once that all the predisposing causes are found in the course of many chronic diseases, as phthisis, Bright's disease, diabetes, etc., and, as a fact, this form of heart-disorder often complicates the later stages of these diseases.

A considerable number of cases occur, which seem to occupy debatable ground between the three general divisions, and hardly belong to either; but they will usually be found affiliated to one or the other when carefully analysed.

The classification adopted is somewhat arbitrary, and is chosen for convenience of description. At the same time, a natural pathological relationship will be found among the members of the several groups sufficiently clear, I think, to warrant the step.

MORRILL ON TYPHLITIS.—In the *Boston Medical and Surgical Journal* for October 7 is an article on the above subject, by Dr. Morrill of Boston. After relating a case, he goes on to say that the form of typhlitis in which the cæcum is the original seat of trouble appears to be far less fatal, and its course (favourable or otherwise) much more protracted, than when the appendix is affected. Of thirty fatal cases, in four only did the disease begin in the cæcum. These four cases all occurred in women, and he believes that this form of the disease chiefly affects female adults. The proverbial neglect of the sex to pay proper attention to the condition of the bowels (thereby favouring the formation of faecal concretions) probably accounts for the liability of females to this trouble. That pure cæcitis should terminate fatally far less often than when the appendix is at fault, we can readily understand. The higher organisation of the cæcum, and its consequently greater recuperative powers, render the chances of perforation much less than when the appendix is inflamed. Then, again, if the trouble originate in the lodgment of a foreign body, its facilities for escape are far greater in the cæcum than in the appendix. A case recently occurred in which a head of wheat that the patient (a woman aged forty-three) had inadvertently swallowed, after a lapse of six weeks was passed from the bowels, and the symptoms of severe inflammation of the cæcum at once subsided. Moreover, according to Bartholow, perforation very rarely takes place through the anterior wall, but makes its way through the gut posteriorly, and thus the immediate dangers arising from acute peritonitis are avoided. The appendix, on the other hand, is retained in its place by a fold of the peritoneum; and this accounts for the rapid development of acute inflammation of its membrane when the seat of the trouble is here. As a rule, cæcitis is slow in its development, and lacks the marked symptoms which are usually present in the other form of the disease. It is usually in cases of this kind that faecal abscess occurs, ulceration of the appendix often ending fatally before pus has a chance to form or to come to the surface. Moreover, an ulcer perforating the posterior wall of the cæcum comes at once upon cellular tissue, and an abscess

is very apt to be the result. That such a collection may be absorbed, and often is disposed of thus, we have abundant evidence. The pointing or rather opening of such an abscess externally is much rarer than one would naturally suppose; in forty-two fatal cases it was observed but twice.

J. MILNER FOTHERGILL, M.D.

RECENT PAPERS.

- A Case of Empyema. By Dr. Walcher. (*Gazette Médicale de Strasbourg*, January 1, 1876.)
- Subacute Articular Rheumatism, with Production of Multiple Tumours in the Peri-articular Fibrous Tissues, and on the Periosteum of a large number of Bones. By M. P. Meynet. (*Lyon Médical*, December 5, 1875.)
- A long-standing Ascites Treated and Cured by Iodised Injections; Consecutive Peritonitis treated by Ice. By M. Boucaud. (*Lyon Médical*, December 12, 1875.)
- Clinical Lecture on a Case of Acute Hip-joint Disease. By Mr. C. F. Maunder. (*Medical Times and Gazette*, December 11.)
- Uterine Asthma. By Dr. Waring-Curran. (*Practitioner*, December, 1875.)
- Treatment of Menière's Disease by Sulphate of Quinine. By M. Charcot. (*Le Progrès Médical*, December 11.)
- Cases of Hystero-Epilepsy. By MM. Bourneville and P. Regnard. (*Gazette Médicale*, December 11.)
- Treatment of Constipation by Faradisation. By Dr. Pierre Boulaud. (*La France Médicale*, December 11.)
- Diagnosis of Diseases of the Heart. By Dr. Germain Sée. (*Le Mouvement Médical*, December 11.)
- Lead-Poisoning in Workwomen who make Wicks for Tinder-boxes. By M. A. Sevestre. (*Le Progrès Médical*, December 18.)
- On Medication. By M. Germain Sée. (*Le Mouvement Médical*, December 18.)
- A Case of Rheumatic Fever with Cerebral Complications successfully treated by the Cold Bath. By Dr. C. Paterson. (*Ugeskrift for Læger*, December 25.)
- History of Tonic and Clonic Convulsions of the Muscles of the Face, and of the upper and lower Limbs, with some appearance of Eclampsia, etc. By Dr. De Stefani. (*Lo Sperimentale*, December, 1875.)
- Cases of Morbus Maculosus Werlhofii, with Remarks. By Dr. H. Rahlfs. (*Betz's Memorabilien*, Jahrgang xx. Heft 10.)
- On the Diagnostic and Therapeutic Importance of Painful Points along the Vertebral Column. By Dr. M. Meyer. (*Berliner Klinische Wochenschrift*, December 20 and 27.)
- Acute Jaundice with Cerebral Symptoms. By Dr. W. Pepper. (*Philadelphia Medical and Surgical Reporter*, November 27.)
- Cellars and Diphtheria. By Dr. A. G. Field. (*New York Medical Record*, December 11.)
- Relation of the Theories of Evolution to Medicine. By Mr. E. Hamilton. (*Medical Press and Circular*, December 15.)
- Suggestions on the Treatment of Intermittent Fever. By Dr. M. A. Wilson. (*New York Medical Record*, December 4.)
- Typhoid Fever: Infection from Drinking-water. By Dr. C. W. Brown. (*Philadelphia Medical Times*, November 13.)
- Tracheotomy in Diphtheria: with Recovery. By Dr. B. Thompson. (*New York Medical Record*, December 18.)
- Intermittency and Irregularity of the Pulse; and Palpitation, Cardiac and Aortic. By Dr. G. W. Balfour. (*Edinburgh Medical Journal*, January, 1876.)
- Diphtheria. By Dr. M. L. Moses. (*Virginia Medical Monthly*, December, 1875.)
- On Migraine. By Dr. T. C. Smith. (*Detroit Review of Medicine*, December, 1875.)
- On Neurasthenia and its Relation to Hysteria and Anæmia. By Dr. V. Holst. (*Dorpat Medicinische Zeitschrift*, Band vi. Heft 1.)

SURGERY.

RODDICK ON A CASE OF FRACTURE OF THE EPIPHYSIS OF THE GREAT TROCHANTER: PERIOSTITIS: PYÆMIA.—In the *Canada Medical and*

Surgical Journal for November Dr. T. G. Roddick, Professor of Clinical Surgery in McGill University, states that on July 4 he was called to attend a lad, H. P., aged sixteen. He found him lying in bed on the right side, and suffering very considerable pain in the lower part of the left thigh and knee, with an aching sensation over the gluteal region. As to the origin and history of his ailment, Dr. Roddick could elicit nothing very definite beyond the following. He had been limping about for three or four days in the previous week, complaining of soreness in the limb, which was attributed to an ill-fitting boot. On July 1, while standing at a desk in an office, he was suddenly seized with an excruciating pain in the left hip, and was taken home in a cab and placed in bed. After a few hours' rest he became much relieved, and on the following day he limped about the house with comparative comfort. On July 3, however, he could not get about without assistance. He had always been exceedingly active, outstripping the majority of his comrades in running, jumping, etc., and on or about the day his lameness became noticeable, he had an indistinct recollection of spraining or twisting the affected limb while hurriedly leaping a fence in pursuit of a ball. He limped through the remainder of the game, but next day thought little of the accident. There was no special pain complained of on pressure over the region of the hip-joint, nor indeed in any other part of the limb. Dr. Roddick, therefore, was disposed to look on the case as being neuralgic, and administered a hypodermic injection of morphia, and gave instructions to foment the thigh with hot water and give a dose of senna.

On July 5 he was much relieved by the hypodermic injection, and had passed a comparatively comfortable night. There was, however, some pain on pressure, and slight swelling over the outer side and front of the thigh, and on moving the limb the pain was decidedly greater in the neighbourhood of the hip than before. The presence of swelling with pain on deep pressure led Dr. Roddick already to suspect periosteal inflammation. There was also now marked constitutional disturbance, as evidenced by the coated tongue, rapid pulse, 110, and slight headache. There was swelling of the parotids, especially of the left side; also slight pain in the right ankle and great toe, with a small patch of redness over each, but no apparent swelling in either. Dr. Roddick ordered hot poultices to the entire thigh, and internally powders containing five grains of Dover's powder, and half a grain of calomel every four hours. He had a slight rigor during the night, and next day the sides of the face were more swollen, the pain in the ankle and toe were worse, and the redness was more extensive. The swelling in the thigh was more marked, and Dr. Roddick plunged an exploring trocar into the thigh, striking the femur on the outer side, and about the junction of its upper and middle third. A quantity of unhealthy looking sanious pus flowed through the cannula. He now gave the patient chloroform, and followed the exploratory puncture with a long and deep incision, down to and through the periosteum. This was followed by probably half a pint of the same kind of pus. The wound was plugged to the bottom with oiled lint, and poultices of linseed meal applied. He prescribed also a grain of quinine, twenty minims of the tincture of iron, and five grains of the chlorate of potash in mixture every four hours, together with beef-tea, milk, and wine *ad libitum*. He was very comfortable after the operation, and slept well. On

the 7th his pulse was 120; temperature, 102°. The tongue was inclined to be dry in centre; he had had two rather relaxed stools. Dr. Roddick injected the wound thoroughly with a weak carbolic-acid solution as the discharge continued to be very profuse and fetid. On examining the bone with his finger passed through the wound, Dr. Roddick found a large surface of bare bone extending upwards towards the neck of the femur. Almost coincident with the removal of the pus by the incision, the parotid enlargement and pains in the joints of the great toe and ankle began to subside, so that in twenty-four hours the face had almost resumed its original appearance, and the patient could move the affectedoints.

On July 8 the parotid swelling had entirely disappeared, and the ankle and great toe could be moved as well as ever. The pulse was 124, and small in volume; temperature, 100.75. The patient had a quarter of a grain of morphia during the night which gave him a refreshing sleep. The discharge from the thigh continued to be large in quantity, and of a most offensive odour. Dr. Roddick repeated the carbolic-acid injection, of which, as before, a large quantity was retained, indicating the existence of a large cavity.

On July 11 the condition of the patient was more unfavourable. The pulse had ranged from 120 to 130, and the temperature from 101½° to 103° at night. The discharge continued to be profuse, and the patient's strength was rapidly running down. Dr. Fenwick met Dr. Roddick in consultation, and after a careful examination of the case agreed with him in the diagnosis and course of treatment, but suggested the introduction of a drainage-tube. Dr. Roddick proceeded immediately, under chloroform, to make a counter-opening about four inches higher than the original one; and while in the act of passing his finger down to meet the probe bearing the tube he came across a fragment of bone, drawn far away from the shaft of the femur, which, on careful examination, was found to be the epiphysis of the trochanter major. As it was held firmly by the muscles inserted into it, and was evidently at that time doing no material harm, it was left. The drainage-tube was introduced, and subsequently did good service in carrying off the rapidly accumulating blood and pus. The patient gradually sank, and died on July 17.

Thirty-two hours after death, assisted by Dr. Cameron, Dr. Roddick cut down upon and removed a large portion of the diseased femur, with the unattached epiphysis of the trochanter major. The periosteum was separated from the bone down nearly to the junction of the lower with the middle third; for that distance the femur lay in the centre of an immense abscess, the lining membrane of which corresponded to the periosteum. The detached epiphysis was almost completely denuded of periosteum, so that it could be removed from its muscular attachments with little difficulty. Owing to the opposition of friends, the examination was not further continued.

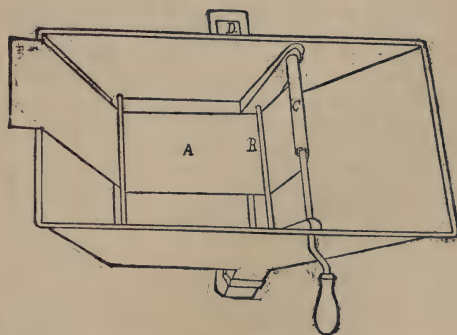
Dr. Roddick remarks that this case is almost unique in kind and occurrence. Professor Hamilton, in his work on *Fractures and Dislocations*, says that, so far as he knows there is only one 'well authenticated example' of fracture of the epiphysis of the great trochanter on record, viz., a case reported by Mr. Key to Sir Astley Cooper.

As to the cause of the accident, Dr. Roddick

thinks that the fracture must have occurred from muscular action, when the lad leaped or threw himself from the fence in pursuit of his ball; and that, the process being firmly held by the tendinous expansions covering it, he was able to walk with comparative ease for several days, until these suddenly gave way, either from ulceration or periosteal effusion. None of the ordinary symptoms of fracture were found at any time.

The other points of interest in the case were the unmistakeable signs of blood-contamination, as evidenced in the enlarged parotids and painful joints, which, however, disappeared with remarkable rapidity as soon as the periosteum was opened and the pent-up pus dislodged. It is more than likely that had the incision been delayed many hours longer, the pyæmic symptoms would have made such headway as to have got beyond all control, and life would have been destroyed much more rapidly than was ultimately the case.

FORSTER ON A NEW METHOD OF PREPARING PLASTER OF PARIS BANDAGES.—Dr. E. J. Forster (*Boston Medical and Surgical Journal*, October 7, 1875) remarks that the common method of preparing plaster of Paris bandages, by rubbing the plaster into the bandage and rolling it by hand, is tedious and untidy. The plaster is scattered about, even when the greatest care is exercised, and the sensation of handling the plaster is decidedly unpleasant. To simplify the preparation of such bandages, and to obviate the objections just mentioned, he had a tinsmith make a pan into which could be inserted the common bandage-roller. When the pan is partly filled with dry plaster and the bandage is rolled, the latter will



become covered with the plaster. The pan, with the roller inserted, is well represented in the cut. D shows the sliding part of the bottom (partially drawn out to bring it into view), which tightly closes the opening through which the roller is inserted. The bandage AC is inserted under the rods, and rolled a few times upon the spindle to secure it, as shown in the cut. A large spoonful of plaster is thrown into the pan and upon the bandage at A, and the bandage is then rolled; by keeping it taut, the rod at B, under which it passes, distributes the plaster evenly, and forces it into the meshes of the cloth. By the rolling, the plaster is applied to both sides of the cloth, and the coarser the latter is, the more plaster it takes up. The ease and neatness with which a bandage can be prepared by this method was demonstrated before the Boston Society of Medical Observation, January 4, 1875.

It has been suggested to Dr. Forster that the same apparatus might be used in the preparation of

starched bandages; the pan being filled with starch of the proper consistency, and the bandage rolled through it.

NEWMAN ON STRICTURE OF THE URETHRA IN THE FEMALE, AND ITS TREATMENT BY ELECTROLYSIS.—Dr. Robert Newman observes (*American Journal of Medical Science*, October, 1875) five cases of stricture, including four cases of organic stricture and one case of spasmodic affection. The author alleges that electrolysis and nothing else cured the strictures.

CASE I. Stricture in a syphilitic subject.—A no. 5 sound was passed into the stricture nearly one inch from the meatus, and there was tightly grasped. Dilatation was perseveringly tried without any appreciable effect. Details are not given. Electrolysis was resorted to.—A no. 8½ olive-headed metallic bougie was introduced into the meatus, and in two minutes was passed into the bladder, and immediately afterwards a no. 11 bougie was passed in the same manner.

CASE II. Stricture and granular urethritis.—A no. 11 metallic bougie was introduced and electrolysis employed. In four minutes the instrument passed into the bladder.

CASE III. Stricture from urethritis.—A no. 6 bougie could be passed. A no. 12 bougie was attached to the battery, and in four minutes could be moved freely in the urethra.

CASE IV. Strictures and fibrous band.—A very small sound was inserted with difficulty. A no. 6 metallic olive-shaped bougie was pressed against the meatus, and the battery employed during five minutes. 'By degrees this obstruction was overcome by the galvanic action and electrolytic absorption.' Further on he writes under the head of this fourth case, 'It is well known that the chloride of zinc has a great affinity for the albuminoids and gelatines. Now the mucous surface from which this bridle (the fibrous band) took its origin being of an albuminous nature, the zinc pole acted by the well-established law of chemical absorption, the albumen being absorbed, the deposit was detached from the walls of the urethra, the carnosity lay loose in the urethra, and was expelled by the *vis à tergo* of the urine.'

CASE V. was one of spasmodic affection of the urethra depending on an ulcer in the rectum.

[We can only ask, would not the steady pressure exerted, without the electrolytic apparatus, have produced equally good results?—*Rep.*]

JOHN CROFT.

SAYRE ON SECTION OF THE LATISSIMUS DORSI. In the *Philadelphia Medical and Surgical Reporter* of October 23, is a clinical lecture on lateral curvature by Dr. Lewis Sayre of New York, with an account of section of the latissimus dorsi for the relief of an obstinate case. He holds that rotation of the vertebræ goes on ere lateral curvature is instituted. After describing lateral curvature, he goes on to speak of its treatment. After going over the ordinary measures, he describes a corset used by him in such cases. It is made by having spiral springs, a few inches longer than the corset, quilted into pockets in the corset and forcibly pressed into these pockets, so that the corset is constantly making efforts to untelescope itself. As the patient is generally smaller at the waist than at the upper and lower extremities of the trunk, this corset is very

much like a double cone. It is placed upon the patient by first fastening the central point at the waist, and then the slope of the corset above and below. A patient was shown, slung by his shoulders, and by doing so the broad band of the latissimus dorsi was brought prominently into view, and the impossibility of drawing him straight without rupture, or section of it, was demonstrated. Any attempt at continued stretching produced reflex spasm of the muscle, and caused it to undergo stronger contractions still. Dr. Sayre then took a straight tenotome and made a subcutaneous section of the muscle, the fibres snapping as the man straightened up. The lateral curvature was straightened at once, and all the deformity left was the angle of the ribs on the opposite side. The man was put to bed, and secured by elastic bands so as to be perfectly straight. Three days afterwards (October 9) he expressed himself as highly delighted, and everything was satisfactory.

J. MILNER FOTHERGILL.

RECENT PAPERS.

- Phlegmonous Erysipelas of the Eyelids. By M. Trélat. (*Le Progrès Médical*, December 11.)
 Exostosis in Adolescents. By M. Richet. (*L'Union Médicale*, December 11.)
 On a Case of Sudden Death with Albuminous Expectoration after Thoracentesis. By M. M. Raynaud. (*La France Médicale*, December 8.)
 On Rapid or Sudden Death after Thoracentesis. By Dr. Brochin. (*Gazette des Hôpitaux*, December 18.)
 Rugination of the Posterior Surface of the Femur in a Patient suffering from Chronic Osteo-periostitis. By Professor M. Richet. (*Le Mouvement Médical*, December 18.)
 Employment of Electricity in Strangulated Hernia. By Dr. J. Lefevre. (*La France Médicale*, December 25.)
 On the Surgical Treatment of Wounds: Experiments. By M. Labbé. (*Le Progrès Médical*, December 25.)
 Case of Intestinal Occlusion treated by Punctures with Potain's Aspirating Apparatus. By Dr. Tuefferd. (*L'Union Médicale*, December 25, 1875.)
 Peri-uterine Adeno-lymphitis. By M. Alphonse Guérin. (*La France Médicale*, January 1, 1876.)
 Cases of Benign and Malignant Tumours treated by Electrolysis. By Dr. G. M. Beard. (*New York Medical Record*, December 11.)
 On some Points connected with Anæsthetics. By Dr. J. C. Reeve. (*Ohio Clinic*, November 27.)
 Case of Bronchocele producing sudden Death by Asphyxia. By Dr. A. H. Smith. (*New York Medical Record*, December 6.)
 Pathology and Operative Treatment of Hip-Disease. By Mr. T. Annandale. (*Edinburgh Medical Journal*, December, 1875, January 1876.)
 On the Treatment of Vascular Tumours. By Dr. G. Bergmann. (*Dorpat Medicinische Zeitschrift*, Band vi. Heft 1.)
 Traumatic Avulsion of the Upper Epiphysis of the Right Humerus. By Dr. G. F. Novaro. (*Gazetta delle Cliniche*, December 14.)
 The Treatment of various Serpiginous Ulcerations. By Dr. S. Engelsted. (*Ugeskrift for Læger*, December 9, 11, 18.)
 Case of Depressed Fracture of the Skull. By Dr. C. Nielsen. (*Ugeskrift for Læger*, September 25.)
 Case of Gunshot Wound of the Abdomen. By Dr. E. D. Worthington. (*Canada Medical and Surgical Journal*, December, 1875.)
 A Case of Blindness following Extraction of a Bullet impacted twenty-three years in the Surgical Neck of the Humerus. By Dr. A. Paci. (*Lo Sperimentale*, December, 1875.)
 Petroleum as a Dressing for Ulcers and suppurating Wounds. By Dr. C. Paul. (*Philadelphia Medical Times*, November 24.)

THE Netherlands government have forwarded to Mr. John Charles Galton, M.A. the war-medal and ribbons for the second expedition to Atchin ("Atjeh") in 1873-4, also a cross with ribbon and one clasp ("Atjeh") for military service in the same expedition.

MATERIA MEDICA AND THERAPEUTICS.

BOUCHUT ON SURGICAL ANÆSTHESIA IN INFANTS BY THE ADMINISTRATION OF CHLORAL BY THE STOMACH.—Dr. Bouchut (in *Bulletin Générale de Thérapeutique*, October 30, 1875) gives a résumé of his communication made to the International Congress at Brussels.

He states that its action is certain and easy, and that like results cannot be obtained in the adult; it is the one new proof of the difference of action of certain medicaments in infants and adults. The latter cannot swallow without disgust and intolerance a sufficient dose to produce anæsthesia. In the infant, on the contrary, chloral is taken without difficulty in doses up to forty-five or sixty grains. It provokes neither pyrosis, gastritis, vomiting, nor diarrhoea, and it produces anæsthesia more or less intense. It is only after a considerable number of cases and a prolonged trial that Dr. Bouchut has communicated his experience. Chloral acts as a hypnotic and anæsthetic. He has frequently employed it in chorea, cerebral rheumatism, opening abscesses, and tooth drawing. In some cases he has continued its employment daily for a month. Out of 8,000 or 10,000 cases he has never had a fatal accident with it. He has given it up to ninety grains daily in the same subject continued for a month or six weeks, so that 3,000 grains or more have been absorbed.

Dr. Bouchut first proposed the employment of chloral in cases of chorea in 1869, and he has seen cases so violent that a fatal result was feared cured by forty-three grain doses night and morning, in one case continued fifteen or twenty days. Sleep and absolute insensibility have been obtained by a dose of forty-five to sixty grains administered at once.

The same result may be obtained by suppositories, but the rectum is more irritable than the stomach; at the end of three or four days the suppositories provoke tenesmus, heat, and irritation, necessitating their discontinuance.

The stomach is the best channel for the administration of chloral in infants. A quarter of an hour after the ingestion of the full dose anæsthesia commences, and is completed at the end of an hour.

In cases where the Vienna paste has to be applied to a nævus, or an abscess to be opened, or teeth to be extracted, chloral is indicated.

The infant groans and moves without waking during the operation, then falls again into a passive condition. On awaking a quarter of an hour later, it is unconscious of having suffered pain, and has been spared the fright of seeing the operator.

ARTHUR W. EDIS, M.D.

DAY ON A NEW DISINFECTANT.—The *Australian Medical Journal* for July, 1875, contains the report of the July meeting of the Medical Society of Victoria. Dr. John Day of Geelong read a paper, with experiments, in which he stated that he had long been endeavouring to find some agreeable as well as efficacious means of purifying and disinfecting the hands after making *post mortem* examinations, and for other disinfecting purposes; especially one suitable for those in attendance on sick persons suffering from infectious diseases. In all his experiments, he had always looked to oxygen in some form or another as the disinfecting agent. Ordinary oxygen is a weak agent in this way, and in the two

active forms of ozone and peroxide of hydrogen, it acquires a somewhat disagreeable odour. After trying various ways of disguising this, he at last succeeded as follows. On examining some of Rimmel's toilet vinegar at the request of a lady friend, he found that it gave the reactions of peroxide of hydrogen pretty freely. He thought it might possibly disguise the smell of the latter substance, and he found that it did so. He therefore mixed ethereal solution of peroxide of hydrogen (the so called ozonic ether) with toilet vinegar, in the proportion of a drachm to the ounce; and found that the combination was a most agreeable as well as highly efficacious disinfectant. Dr. Day states 'that there are two marked advantages to be derived from the combination of vinegar with the peroxide of hydrogen. In the first place, vinegar, in common with most acids, is capable of preserving peroxide of hydrogen; and in the second place it allows of this powerful disinfecting agent being used with soap, the free alkali of which, under ordinary circumstances, would decompose it, but when it is combined with vinegar no appreciable change is produced.' He recommends that, after attending persons with puerperal fever, or other infectious diseases, the hands should first be well washed and dried, and that this disinfectant should be used afterwards being well rubbed into the skin, like eau de Cologne, or any other perfume.

W. BATHURST WOODMAN.

ROUXEAU ON THE HYPODERMIC INJECTION OF QUININE.—In the *Journal de Médecine de l'Ouest* for June, 1875, M. Rouxeau describes a case of uterine congestion associated with quotidian intermittent, the principal symptom of which was a neuralgic pain in the right groin; the pain was exceedingly severe, and recurred with striking periodicity. Four grammes (sixty grains) of sulphate of quinine were administered within a period of forty-eight hours, without making any impression on the disease, although the usual physiological symptoms, such as buzzing in the ears, deafness, and considerable gastric irritation were produced. After another day had elapsed, fifteen centigrammes of sulphate of quinine with one centigramme of sulphate of morphia were injected under the skin at the seat of pain. The subsequent paroxysm was very slight, and a repetition of the injection on the next day completed the cure. The solution employed contained a very small proportion of acid, and did not give rise to any serious local irritation.

E. BUCHANAN BAXTER, M.D.

WARM WATER IN SURGERY.—In a report from the Bellevue Hospital (*New York Medical Record*) it is stated that in the treatment of contusions, etc., by immersing the parts involved in warm water, one great inconvenience has been the excessive swelling which usually occurs as the result of the immersion. This can be avoided by a very simple process, namely, freely oiling the parts before suspending them in the water.

In the case referred to another fact was illustrated, namely, that the pus covering the surface of a wound becomes coagulated, and in that manner may obstruct a discharge which should continue. It is important therefore to remove the limb from the water occasionally, and syringe out the openings which may communicate with any sinuses or pockets from which pus has been discharging, for it will not be dissolved and removed by the water alone.

BORACIC ACID IN SCIRRHUS OF THE BREAST.—A case of scirrhus of the breast treated at the Bellevue Hospital, New York, presents a point of special interest in relation to the dressing. The breast was removed in the usual manner, no axillary gland being involved; but after the operation the patient suffered severely from pain in and about the wound. This pain was very markedly relieved by applying cloths which had been wet in a solution of boracic acid. Pieces of muslin were dipped into a saturated solution of this acid, and then dried. Before being applied, they were dipped in water.

RECENT PAPERS.

- On the Hygienic and Thérapeutic Action of Extract of Meat. By Dr. Bouchardat. (*Bulletin Général de Thérapeutique*, November 30.)
- On Pilocarpine and the Essence of *Pilocarpus Pinnatus* (Jaborandi). By Dr. Ernest Hardy. (*Ibid.*)
- On the Essence of Sandal-wood: its Advantages in the Treatment of Blennorrhagia and the Best Method for its Administration. (*L'Union Médicale*, December 7, 1875.)
- The Value of Belladonna as a Prophylactic in Scarlet Fever. By Dr. E. H. Stevens. (*Ibid.* November 27.)
- Atropia in Opium-poisoning. By Dr. S. W. Morrison. (*Ibid.*)
- On the Internal Use of Salicylic Acid. By Dr. L. Riess. (*Berliner Klinische Wochenschrift*, December 13 and 20.)
- Results of the Treatment of Articular Rheumatism with Salicylic Acid. By Dr. Stricker. (*Berliner Klinische Wochenschrift*, January 1, 1876.)
- Note on Jaborandi. By Dr. W. Craig. (*Edinburgh Medical Journal*, January, 1876.)
- On Jaborandi. By F. Biering. (*Ugeskrift for Læger*, November 20.)
- Hydrochlorate of Apomorphia as an Emetic. By Dr. V. Bendz. (*Ugeskrift for Læger*, October 9.)
- The Action of Tartar Emetic. By Dr. A. Mosso. (*Lo Sperimentale*, December, 1875.)
- Action of Silver on the Nervous and Muscular Systems. By Dr. A. Curci. (*Ibid.*)
- On the Use of Chloral-Hydrate in Early Childhood. By Dr. W. Kovatch. (*Betz's Memorabilien*, Jahrgang xx. Heft 10.)
- The Use of Saccharated Lime in Typhus Fever and other Complaints. By Dr. Cleland. (*Practitioner*, December, 1875.)
- Two Cases of Neuralgia treated with Chloride of Ammonium. By Dr. Young. (*Ibid.*)
- Clinical Remarks on the Use of an Arseniate of Natural Iron. By Dr. Baron. (*Gazette des Hôpitaux*, December 30.)
- The Action of Nitrite of Amyl. By Dr. Filehne. (*Berliner Klinische Wochenschrift*, November 1.)
- A Contribution to the Knowledge of the Action of Propylamine in Acute Rheumatism. By Dr. Leo. (*Berliner Klinische Wochenschrift*, October 18.)
- Use of Salicylic Acid in Otorrhœa. (*Detroit Review of Medicine*, November, 1878.)
- Ancient and Modern Inunction in Health and Disease. By Dr. E. C. Angell. (*New York Medical Record*, October 30.)
- Eucalyptus and Cancer. By M. A. Luton. (*Mouvement Medical*, November 6.)
- On the Falsification of Bromide of Potassium. By Dr. Auguste Voisin. (*Bulletin Général de Thérapeutique*, November 13.)
- On the Treatment of Eclampsia by Chloral. By Dr. Allo. (*Ibid.*)

PSYCHOLOGY.

JACKSON ON TEMPORARY MENTAL DISORDERS AFTER EPILEPTIC PAROXYSMS.—Dr. Hughlings Jackson (*West Riding Asylum Medical Reports*) has written an article which illustrates in clear and in-

telligible language the fact that the public cannot possibly measure the responsibility of a criminal when accused of an act which he has committed when labouring under a nervous disorder, if the symptoms of such nervous disorder be only slight and obscure. We should recommend this article to the notice of those learned gentlemen who think that, because they have laid down a law, probably founded upon some fashionable popular prejudice, such law must necessarily be correct; and who in consequence, are in the habit of turning into ridicule medical experts in a court of justice, whose evidence is grounded upon the immutable principles of nature and disease.

Dr. Hughlings Jackson's position as physician to the Hospital for the Epileptic and Paralysed has afforded him unusual opportunities of studying those obscure cases which hover about the border-land of insanity, and especially of observing the mental conditions of patients labouring under the various forms of epilepsy.

Dr. H. Jackson divides his subject, although not in a formal manner, into four heads:

I. Cases in which eccentric or grotesque acts merely were observed.

II. Cases in which great complexity of action was found blended with the epileptic attacks.

III. Cases of medico-legal interest, but of no great importance as regards criminality.

IV. Cases accompanied with such violence as to render the patient amenable to law.

With regard to the first set of cases, in which the patient simply acts oddly, it is observed that such cases have an important *indirect* medico-legal interest.

It is convenient to have one name for all kinds of doings after epileptic fits, from slight vagaries up to homicidal actions. They have one common character—they are *automatic*; they are done unconsciously and the agent is irresponsible. Hence the term *mental automatism* is used. Dr. H. Jackson thinks it probable that there is a transitory epileptic paroxysm in every case of mental automatism occurring in epileptics before their mental automatism sets in, although he freely admits that occasionally no signs of a prior fit are discoverable.

Passing on to the condition after the paroxysm, it is found that it is duplex: (1) there is loss or defect of consciousness, and there is (2) mental automatism. In other words, there is (1) loss of control *permitting* (2) increased automatic action.

For medico-legal purposes it may be assumed either that mental automatism always occurs after, or that in some cases it replaces, an epileptic seizure.

As an example of the first group of cases—those where merely eccentric acts are performed—an epileptic is mentioned who, when in an omnibus, blew his nose on a piece of paper, presumably after a slight fit. When he got out he gave the conductor 2*l.* 10*s.* instead of the usual coppers. This man was subject to both little and great seizures. It is important to note that the 'form' of these actions was correct.

Next, in reference to the statement that highly compound actions can be done automatically—*i.e.* unconsciously—another case of great interest is reported.

Here the diary of the patient himself is quoted. He says:—'I felt symptoms of an attack, and sat down, I believe, on a chair against the wall. And here my recollection failed, the next thing I was con-

scious of being the presence of my brother and mother (who had been sent for, as they lived opposite); and I have since been informed by my sister-in-law that she came into the kitchen and found me standing by the table mixing *cocoa* in a dirty gallipot, half filled with bread and milk, intended for the cat, and stirring the mixture with a mustard-spoon, *which I must have gone to the cupboard to obtain.*

This case illustrates the fact that the slightest fit the more complex the automatism after it. What form a man's mental automatism will take depends, Dr. H. Jackson thinks, very much on what his natural disposition is. A savage and suspicious man would, when a fit had temporarily removed his highest faculties, more likely have killed some one than have mixed *cocoa*. And just as this poor fellow went to the cupboard for a mustard-spoon, so, had he been a savage man, he might have gone to another room for a poker when his sister-in-law came in.

Dr. H. Jackson next states cases with a criminal aspect, but essentially similar scientifically, in order to illustrate how the trifling cases bear. He begins with trifling crimes. He had a boy under his care who was subject to fits, beginning by a 'subjective' sensation of smell; he would turn pale. To use his mother's expression, he would often after the seizures go 'right out of his mind.' He was a shoeblack; and once after a seizure threw his blacking-box at a policeman. This was the 'crime.' For this he was taken before a magistrate, and fined five shillings. One evening after a fit he got into a rage, and said that a gentleman in the street had offered him five shillings to clean his boots. Later he was taken to a lunatic asylum.

Cases are next mentioned in which the patient's doings were violent, a separation which is arbitrary although convenient. The violence and outrageousness of the seizure depend doubtless very much on the natural disposition of the patient who suffers from the attack.

The following case is the one of the most direct medico-legal interest, which was under the surgical care of Mr. Rivington, and the notes of which were taken by Mr. Mercer.

On the afternoon of January 19, 1874, the patient, Emily A., aged thirty-five, was cutting bread for her children's tea, when she suddenly sent them all out of the room, and was found a short time after lying in a pool of blood with a deep gash in the left arm, which divided all the structures in front of the elbow, and laid the joint open. It was then found that she was out of her senses; she was at once brought to the hospital, and found to be in an excited and maniacal condition, and accusing people around of having caused the injury to her arm. After several variations in her mental state, she was at length discharged from the hospital.

A year later, January 10, 1875, Emily A. had had very good health since she left the hospital. She had had several 'fainting fits,' in which she lost her senses for a few minutes, but none of the spells of unconsciousness that she used to have. She had never harmed herself or anyone else, except on the one occasion when she came to the hospital.

This case shows that the mental automatism may be developed by suggestion, or altered thereby. She was cutting bread when, as may be supposed, the fit took her.

This able paper is concluded by a few appropriate

remarks upon the importance of hereditary influence being given its due value in medico-legal inquiries.

H. SUTHERLAND, M.D.

CLOUSTON ON APHASIA AND CHOREA IN GENERAL PARALYSIS.—Dr. Clouston (*Journal of Mental Science*, October, 1875) remarks that various nervous symptoms occur from time to time in the course of general paralysis that closely imitate many of the neuroses of sensibility and motion, such as neuralgia, amaurosis, locomotor ataxy, glosso-pharyngeal paralysis, hemiplegia, apoplexy, and epilepsy. In two cases the ordinary symptoms of aphasia were present for a short period in one stage of the disease. In the first the aphasia came on once soon after the commencement, when the motor and mental symptoms were very mild. The patient, a man, was not exalted or excited, and had had no congestive or epileptic attacks. The first signs of the disease were headache, dulness, depression, causeless fear and suspicion. About eight weeks after it was noticed that he could not speak properly when asked a question. He clearly understood and tried to answer, but could not. He could get out one syllable but no more. When asked the name of an article he could not give it or gave the wrong, *e.g.*, called a chair a hat. There was much tremor of the lips and tongue. Next day he was quite free, but a fortnight later on had another attack of similar character and duration, and then became silly and soon excited with exalted delusions. At the same time the right side became more paralysed than the left. In the second case the aphasia was complete, and occurred after an epileptiform attack in the beginning of the disease. When aphasic he knew what was said, nodded his head and looked pleased, but could not say a word. This lasted for a few days and then passed off. The motor paralysis was in no degree unilateral. The case of unilateral chorea happened in a lady with slowly advancing and mild symptoms of the disease. She could only go up or down stairs with difficulty, and mentally was in a state of happy enfeeblement. She had a congestive attack beginning with stupor, going on to convulsions of the right leg, arm, and face, with a temperature over 100°. The convulsions came and went for a few days, leaving the side paralysed when they were not present. When they finally disappeared the paralysis was complete, but in a few days the power of movement came back, first in the legs and then in the arms. When she moved her left arm it jerked about as in chorea, and when she tried to speak the muscles of the face and tongue on the left side twitched, while the articulation was that of a bad case of chorea. The choreic movements of the face have persisted. Muscles supplied by the seventh nerve are most affected, all the facial and masseters twitching. The sixth nerve is markedly affected, also the third; the fourth apparently is not. The glosso-pharyngeal and spinal accessory nerves are affected, as shown in swallowing. Her speech is inarticulate. The sensory nerves and the pneumogastric do not seem to be affected.

G. FIELDING BLANDFORD, M.D.

WINTER ON A CASE OF NEW FORMATION IN THE CEREBELLUM.—Dr. Winter, of Brandenburg (*Berliner Klinische Wochenschrift*, September 13, 1875), relates the following case.

A cuirassier, twenty-four years old, strong and hearty looking, was admitted into the garrison hospital at Brandenburg, complaining of pain in the back of the

neck and head; otherwise he was healthy. At the age of eighteen he had four epileptic fits.

The condition complained of was attributed to rheumatism, till the patient was one day suddenly seized with vomiting. After remaining some few days in the hospital, the patient was heard screaming and groaning in the night. He was found dead in his bed shortly after this commenced. Throughout his illness there was no other symptom of importance. The illness only lasted three months. On opening the skull and carefully dissecting the brain, there was found attached to the pia mater, just above the atlas, a bladder of yellowish coloured fluid, which pushed aside the medulla oblongata towards the left. It extended upwards and outwards to the lobus biventer and tonsil of the cerebellum on the right side. Connected with this bladder, and lying on the surface of the lobus biventer, was a tumour of the size of a bean, resembling, on section, a lymph-gland. This tumour was not attached to the cerebellum. The entire right hemisphere of the cerebellum fluctuated as a partially filled bladder. On section it was found to consist of two large cysts, separated by a medullary partition, covered with a smooth white fibrous membrane. These cysts contained a clear yellow fluid, apparently homogeneous. The ventricles were all distended with a similar fluid. In the floor of the third ventricle was a small mass of exudation of the consistency of organised lymph. The remaining organs were healthy. From these appearances, the disease was regarded as one of cysto-sarcoma arising from the pia mater, affecting first the cerebellum, then the medulla oblongata. The case is remarkable as, notwithstanding the extensive lesions found after death, including the entire destruction of the right half of the cerebellum, there were no symptoms except of a complex negative description during life.

VOELKEL ON A CASE OF TUMOUR OF THE BRAIN. Dr. A. Voelkel (*Berliner Klinische Wochenschrift*, Nov. 8, 1875), after noticing the rarity of non-tuberculous tumours in the brain of children, gives the following case.

Caroline B., aged nine years, an intelligent, strong, and healthy looking child, in the beginning of February, 1875, had a sudden and severe attack of vomiting, followed by internal strabismus of the left eye. On the 15th of the same month she had another attack of vomiting; this time, accompanied by pain in the left side of the head, with some left facial paralysis, and a certain amount of double vision.

On February 24 this condition of affairs was increased.

The patient rapidly became worse, and, after some severe convulsions, died on April 2.

On opening the skull, the vessels on the surface of the cerebral hemispheres were found charged with blood. The arachnoid sac contained a considerable quantity of serous fluid. Loosely attached to the left side of the pons Varolii, was a roundish tumour nearly attaining to the size of a hen's egg. It was of a light brown colour. On microscopical examination, this tumour was found to be a specimen of what Virchow has called myxosarcoma.

The author, in conclusion, remarks that the case is interesting on account of the age of the patient, and the fact that there was no disturbance either of the spinal nervous system or of the mental functions.

WEISS ON A CASE OF MENINGO-MYELITIS ASSOCIATED WITH ALCOHOLIC DELIRIUM.—Dr. Jacob Weiss relates the following case (*Allgemeine Wiener Medizinische Zeitung*, September 14, 1875). A baker, aged thirty-three, was admitted into the hospital on February 17, suffering from alcoholic delirium. He had taken a large quantity of alcohol. At first he was sleepless, but sleep came on gradually after about seventy-two hours, and the patient seemed to be recovering. On the 28th, however, he was obliged to keep his bed on account of giddiness and inability to stand. The pulse was accelerated. On March 3 he was still unable to walk or stand without help. There was an increased reflex action of the lower extremities, with hyperæsthesia of the upper, and paralysis of the sphincters. There was also inability to extrude the tongue. This condition continued, and the patient became worse, a state of stupor supervening till March 9, when he died. At the necropsy the pia mater of the brain was much congested; there was acute internal hydrocephalus, with some toughness of the brain-substance. On the side of the left cerebellar hemisphere, the vessels were injected, and the pia mater much thickened. The pia mater of the spinal cord was also thickened in some places, particularly at the cervical enlargement. The substance of the cord in the cervical enlargement was softened, and in some places diffuent; lower down the consistence was normal. The heart was fatty, the liver was enlarged, and there was slight steatosis of that organ. [The record of the above case is of very little practical value, because the account of the necropsy, which is given in the author's words, is incomplete, there being recorded no microscopical investigation either of the brain or cord. The reader is left to imagine the condition of the nervous elements and of the vessels, being simply informed that in certain places the cord was softened, the brain 'tough,' and the membranes thickened. No mention is made of the quantity of fluid found in the ventricles as proving the hydrocephalus.—*Rep.*]

W. H. KESTEVEN.

RECENT PAPERS.

The Genesis of Pytialism in some forms of Mental Alienation.

By Dr. A. Tamburini. (*Rivista Sperimentale di Freniatria e di Medicina Legale*, Anno i. Fasc. 6.)

On Errors in Judgment, considered chiefly from the point of view of their Differential Diagnosis with Illusion. By A. Mairet. (*Montpellier Medical*, December, 1875.)

Contagion of Madness. By Dr. Brunel. (*Annales Médico-Psychologiques*, November, 1875.)

Case of Transfusion of Blood in a Lunatic. (*Gazette des Hôpitaux*, December 21, 1875.)

Reflex Automata and Unconscious Cerebration: a History, and a Criticism. (*The Journal of Mental Science*, January, 1876.)

Skæe's Classification of Mental Disease. By Dr. T. S. Clouston. (*Ibid.*)

The Plea of Insanity in Cases of Murder. By Dr. Yellowless. (*Ibid.*)

On General Sensibility and its Changes in Melancholic Affections. By Dr. Semal. (*Annales Médico-Psychologiques*, November, 1875.)

Psycho-pathological Considerations on the Genesis of Melancholic Delirium. (*Ibid.*)

At recent meetings of the Executive Committee of the British Pharmaceutical Conference, grants amounting in all to 75*l.* were made to a number of chemists for the purpose of obtaining material to enable them to carry on scientific researches into the nature and properties of certain substances used in pharmacy.

OBSTETRICS AND GYNÆCOLOGY.

HILLAS ON OVARIOTOMY WITH CÆSAREAN SECTION.—At a meeting of the Medical Society of Victoria in December, 1874 (*Australian Medical Journal*, February, 1875), Mr. Thomas Hillas related a case in which ovarian disease was complicated with pregnancy. He said: Mary M'C., aged twenty-four, single, was admitted to the Ballarat District Hospital, June 4, 1872. She believed that she became pregnant in March, 1871, and not wishing to be confined in the district in which she lived, she sought admission to the lying-in ward of the Ballarat Benevolent Asylum. She was admitted there in November, 1871, and after staying there until the following June, a consultation of the honorary staff was called, and she was discharged, her case being deemed ovarian dropsy, and not pregnancy. On her admission to the hospital she was examined by the resident surgeon, and subsequently by the honorary surgical and medical staff, all agreeing that she was suffering from ovarian dropsy, and that it was a suitable case for operation. On June 13, assisted by the honorary surgeons, Messrs. Nicholson and Whitcomb, and the resident surgeon, Mr. Owen, and the honorary medical staff, the patient being under chloroform, I commenced the operation by an incision midway between the umbilicus and pubes. On arriving at the peritoneum, I made a small opening into it, when out spurted a large jet of venous blood which the pressure of the finger controlled. I came to the conclusion I had wounded, unwittingly, a gravid uterus; and feeling sure of this, I extended the first incision upwards to the umbilicus, when a large uterus rolled out on to the thighs, and the ovarian sac protruded. This was tapped, and about eleven quarts of fluid were drawn off; there were but few adhesions, which were easily broken down, and there was no hæmorrhage. The sac contained about a dozen small cysts, but the external wound being large, there was no occasion to tap them. The pedicle was short and thick, and after being tied firmly with a double whipcord ligature, the clamp was securely applied, and the pedicle divided, the ends of the double ligature being tied over the ends of the clamp. Now came the difficulty. The uterus was all this time lying on the thighs, with a fetus in it, and a wound through its muscles, probably into the placenta. Some of the bystanders advised that the wound in the uterus should be sewn up, and that organ replaced in the abdomen; but seeing that labour must come on soon, and that rupture of the uterus would most likely occur at the seat of injury, I personally decided to perform the Cæsaean operation, as being the most likely means of giving the patient a chance to recover. The uterus was incised to about five inches, and the placenta and a fetus, alive, and well developed, at about the eighth month of gestation, were extracted. I then stitched up the wound in the uterus, with about nine or ten silver wire sutures, carefully tucking the cut ends down into the incision; immediately on completing this, the uterus contracted firmly. I then sewed up the wound in the abdomen with deep and superficial stitches, the deep stitches including the peritoneum, leaving the clamp at the lower margin of wound, and a good deal dragged upon. The right ovary was the one affected, and the patient measured sixty inches

round the abdomen before the operation. The sac and its contents, after removal, weighed thirteen pounds, and are preserved in the hospital dispensary. The patient vomited for about forty-eight hours after the operation, having been an hour under chloroform. This was relieved by morphia and ice, and on the fourth day all unfavourable symptoms abated. There was a discharge of pus from the lower portion of the wound, which ceased in about a fortnight, and then it completely healed. She was discharged, cured, at the end of six weeks. On July 3, a month after the operation, she menstruated moderately for four days, and again on August 28. I have seen her several times since, and she is in perfect health.

J. MILNER FOTHERGILL, M.D.

VINAY ON DYSENTERY IN LYING-IN WOMEN.—Dr. Vinay (*Lyon Médical*, August 15 and 22, 1875) gives ten cases collected chiefly from the Maternity Charity, at Lyons, during the summer of 1872, and from the private practice of M. Gignoux and M. Chambard-Hénon.

Of the seven hospital cases, who, with the exception of one, were all multiparæ, the patients were attacked, between the fourth and eighth days, suddenly with colic, straining, tenesmus, and generally bloody glairy stools; the majority had not any rise of temperature or alteration in the frequency of the pulse. In none were there any signs of hæmorrhoidal congestion; in two instances there was obstinate constipation. The treatment was in all cases a mild saline aperient, in the form of 'Eau de Sedlitz;' for the most part, the symptoms rapidly subsided under this treatment.

Of the four private cases, dysentery happened twice in one woman. In this instance there was no tenesmus, which is accounted for by the use of laudanum enemata at the onset. The other patients were primiparæ; and in one the labour was terminated by instruments. They all did well. It is worthy of notice, that in nearly all the cases the children were of unusual size; and in one half of the cases the occiput was posterior either to the right or left.

Dr. Vinay, in discussing the pathology of the disease, remarks how rare rectal affections are in parturient women, compared with vesical; this, he believes, arises from the former organ being less pressed upon, contused, and implicated both during gestation and labour than the bladder. The causes inducing dysentery in lying-in women he divides into predisposing and direct (*efficientes*).

The predisposing causes are:

1. Pregnancy, causing an increased flow of blood to the pelvis and a retardation to its backward flow.
2. Hæmorrhoids, above all internal. In most of the above cases there were old signs of this affection, but in none had the patients suffered from them during the pregnancies under observation.
3. Constipation, which is frequent during the latter stage of pregnancy, and for the first days after delivery.

Padzinski insists that prolonged retention of urine after delivery is the more serious in its after-consequence. Dr. Vinay considers constipation equally, if not more so. M. Béhier met with a case of numerous ulcerations of the rectum at a necropsy, where the patient had had the bowels confined for eight days after parturition. Virchow goes so far as to maintain that without fecal accumulation a true dysentery could not be produced.

The effective causes result exclusively from labour, especially difficult.

- a. Size of child; the majority were large children.
- b. Obstetrical operations, chiefly instrumental.
- c. Presentation of the occiput posteriorly to the right; in some of the above cases it was to the left. Nægelé showed that, when this variety of presentation occurred, the rotation of the head took place within the pelvis at the plane of the outlet. Of the seven cases noted in the Maternity, in four the occiput was posterior.

The symptoms were those usually noticed in dysentery. The third day was, as a rule, the day of attack; it was almost invariably preceded by constipation. It is noteworthy that at the time when these cases occurred in the Maternity, the sanitary condition of the hospital was extremely bad, septicæmia being frequent.

The tenesmus was the most painful symptom.

M. Laroyenne found the mucous membrane of the rectum much thickened in the cases on which he made a necropsy, but Dr. Vinay had never had an opportunity of making a *post mortem* examination.

The prognosis of these cases he regards as good; the best treatment is mild saline aperients, and careful guarding against prolonged constipation in parturient women.

ODEBRECHT ON INTRA-ABDOMINAL PRESSURE.

Dr. Ernest Odebrecht, of Freiburg (*Berliner Klinische Wochenschrift*, April 5, 1875), observes that Professor Hegar states that, under certain conditions not yet clearly made out, the hollow organs of the lower part of the abdomen are capable of aspiration when the body is in the recumbent position ('Suction Phenomena of the Abdomen,' *Archiv für Gynäkologie*, Band v. p. 177). He made two experiments upon a woman who had a tumour attached to the right side of the uterus, and who, after her delivery, was seized with peritonitis, which nearly destroyed the patient. Eight weeks after the attack, on drawing the urine off with a catheter, a noise like the suction of air up into the bladder was heard; and although there was some urine in the bladder, not a drop escaped by the catheter. A water-manometer was used to investigate this strange phenomenon. The following results were obtained.

1. The pressure in the bladder, measured singly, equalled two to three centimètres (water-column).
2. The pressure in the rectum, measured alone, was about equal to twelve centimètres.
3. On simultaneous measurement in the rectum and in the bladder, the pressure of the latter rapidly decreased on the passage of the manometer up the rectum.
4. Pressure on the bladder was considerably less when downward pressure was made on the posterior wall of the vagina.

The explanation is thought to be that the tumour became inflamed, causing peritonitis to be set up, which attacked the anterior surface of the uterus and the posterior wall of the bladder, which by the position of the tumour were pressed upon one another and became, finally, firmly attached together by bands of lymph, as also the adjacent abdominal walls to the fundus of the bladder. Consequently, forcible downward pressure would partially empty the bladder. Upon the cessation of this expulsive effort the fundus of the bladder would be lifted up by the abdominal

adhesion and stretched backward by the uterine, so that air could be sucked up.

A later experiment, when the woman had quite recovered, was not attended with any results.

Another case was that of a spare emaciated woman, aged thirty, with a fluctuating tumour about the size of a child's head at the bottom of the stomach. The writer succeeded in getting the woman to suck air once into the bladder through a catheter. Such a rush of air took place that it was heard by the operator, but all future attempts were resultless. The manometer in this case, when abdominal pressure was removed for a moment, indicated a fall of one or two centimètres, but not without manual pressure was applied.

STADTHAGEN ON EXTRAUTERINE PREGNANCY.—

A case of extrauterine pregnancy was exhibited by Herr Stadthagen before the Berlin Medical Society on February 3, 1875 (*Berliner Klinische Wochenschrift*, March 29, 1875). It occurred in a Jewess, aged thirty-eight, who had miscarried eighteen years previously through a fall. She had never been pregnant since. A tumour was made out, on her admission into the Jewish Hospital, in the abdomen, reaching as high as the umbilicus, and cognisable, *per vaginam*, in the anterior and posterior *culs-de-sac*. The uterus was pushed up against the sacrum, but not enlarged. Menstruation had ceased in September. There were no symptoms of morning sickness, nor enlargement of the breasts. On January 1 she exhibited signs of internal hæmorrhage, but recovered from it. On the 23rd she was suddenly seized with intense abdominal pain; she became gradually worse, and died on the 29th. A hæmatocele was suspected from the symptoms of internal hæmorrhage. The necropsy showed there had been repeated ruptures of the membranes covering the ovum, whence blood had escaped; and in the abdominal cavity there was a considerable amount both of recent and old-standing clots. The ovum was imbedded in a sac formed by the matting together of the small intestines, mesentery, and meso-colon of the sigmoid flexure. The right ovary was attached to the sac. The corresponding Fallopian tube was perfect, all but the fimbriated extremity, which seemed to be lost in the sac. The Fallopian tube was injured, and its canal somewhat narrowed; there being a slight contraction opposite the distal end. On the left side, the appendages were normal.

ALBU ON A CASE OF TUBAR PREGNANCY.—

Herr A. Albu reported, at a meeting of the Hufeland Society, a case of tubar pregnancy with sudden death, mistaken for a case of poisoning (*Berliner Klinische Wochenschrift*, March 22, 1875).

The woman was suddenly seized with sickness, diarrhoea, violent pains in the hypogastric regions, and repeated faintings. Up to the moment of being taken ill she was in perfect health. The catamenia had ceased for over two months. The abdomen was intensely sensitive to the touch, as also was the uterus. Poisoning was suspected, as she was living in concubinage. Shortly after Dr. Albu left her she suddenly collapsed and died.

The necropsy showed a rupture of the left Fallopian tube, whence the hæmorrhage proceeded. The membranes of the ovum were also torn through. The ovum was about the size of a walnut. Dr.

Albu observed that Maschka had already attracted attention to these cases of tubar pregnancy simulating poisoning by their suddenness, by tenderness and distension of the abdomen, by the extreme sickness and retching, pallor of the surface, small, barely perceptible pulse, collapse, cramps and convulsions, and unexpected sudden death. Herr Steinthal stated that Heim, in his admirable thesis on *Graviditas Tubaria*, related thirty-two cases, sixteen of which he had observed himself. W. C. GRIGG, M.D.

CAZIN ON CÆSAREAN SECTION IN CASES OF FIBROID TUMOUR.—Dr. H. Cazin (in *Archives de Tocologie*, December, 1875) gives the details in full of a case of this nature, filling up the pelvic cavity, where recovery ensued. He refers to twenty-one other cases, collected from various sources, where the operation was performed. He concludes that when a pelvic tumour occupies the cavity, and in consequence of its volume, or pediculation, or from adhesions contracted, cannot be displaced, where, in fact, the space remaining free is insufficient for the execution of other obstetrical manoeuvres, nothing remains but to practise hysterotomy.

It is difficult to establish a general rule. Each case must be treated upon its own merits. He thinks, however, that unless there are special indications, it is prudent not to temporise beyond twenty-four or forty-eight hours.

The line of incision must depend upon the position of the tumour and the axis of the uterus.

The proportion of children saved by Cæsaean section is sufficiently remarkable. Of twenty-two operations recorded, fourteen were living, three were dead before, and one died during the operation. In four cases the result is not stated.

Almost all the women were at full term, one only at the sixth, seventh, and eighth month respectively.

Only three mothers survived out of the twenty-two cases, death ensuing from exhaustion, hæmorrhage, or peritonitis. Professor Dupaul lately remarked that peritonitis killed twenty-nine out of thirty cases after hysterotomy; and on reperusing the cases, one is struck with the number of deaths due to hæmorrhage or collapse.

Whatever it be, the results of Cæsaean section in cases of fibroid tumours are deplorable.

Of the twenty-two cases recorded here, seven only were performed in Paris and other large towns, the remainder in the country and small towns. The want of success cannot, therefore, be ascribed to operating in the large towns.

It is in the condition of the uterus itself that we must seek for the principal cause of the mortality.

One has, in fact, to deal with a diseased organ, often for many years, having had sometimes to submit to many miscarriages, the irritation having extended to the peritoneum,—an organ which, apart from the previous aggravating circumstances, has suffered during the whole of the duration of pregnancy from the simultaneous presence of the product of conception and from the tumour, with a predisposition, so to speak, to inflammation.

The condition is far different from that where we incise a relatively healthy uterus on account of pelvic deformity. When the fibroid tumours are adherent by a large base, the portion of the uterus which is dilated for the lodgment of the foetus, weakened by excessive distension and a proportionate thinning, cannot contract after the operation and so encourages hæmorrhage; old adhesions to the

neighbouring organs contributing also to keep up the inertia.

In certain cases the hæmorrhage has been such as to necessitate compression of the aorta, sutures, etc., and may be directly credited as the cause of death in many cases, as well as indirectly of nervous accidents and collapse.

In some cases, where fruitless punctures as tentative operations had been attempted, which have not a little contributed to aggravate the situation, we must not credit the operation itself with the death resulting. ARTHUR W. EDIS, M.D.

QUINBY ON SPONTANEOUS CURE OF AN OVARIAN CYST BY DISCHARGE PER RECTUM ET VAGINAM.—Dr. Fred. Quinby, of East Jefferson, relates the following case in the *Detroit Review of Medicine* for December.

Mary S., aged forty-one, married, had one child twenty years of age. Her health, up to five years ago, had been good, with the exception of the menses, which were always very irregular, appearing at intervals varying from three weeks to three months; the discharge was sometimes scanty, at other times profuse. She first noticed a tumour about five years ago; it then appeared about the size of a hen's egg, situated in the left hypogastrium. It increased in size very slowly until about four years since, when the patient received a heavy blow on the affected side, after which the tumour grew very rapidly. No medicine was given throughout the period of growth, with the exception of opiates, which her extreme pain demanded.

Her abdomen last spring was as large as that of a woman at term. The physician in attendance, after consultation, decided that nothing short of ovariectomy would avail, which the patient consented to have performed. Last May, a short time prior to the day set for the operation, the woman, while engaged in household duties, experienced a sudden shock, or, as she expressed it, a 'giving way of something in the lower part of her belly,' followed by a profuse gush of a thick yellow and tenacious liquid, accompanied by a sudden diminution of the tumour. The discharge issued from both the rectum and the vagina, and continued to flow profusely for about four weeks, at the expiration of which time no trace of the tumour could be found. The woman is now, and has been for the past four months, able to do her own work, besides doing considerable work for other people.

DUROZIEZ ON THE INFLUENCE OF HEART-DISEASE ON MENSTRUATION, PREGNANCY, AND THE FÆTUS.—A series of articles on this subject, by M. Duroziez, is concluded in the *Archives de Tocologie* for November, 1875. Under the influence of this morbid state, menstruation is disturbed, sterility is possible, miscarriages are frequent, and premature labours often occur. The infant's life is jeopardised, either at the time of birth or a short time afterwards, the mother is threatened with death more or less rapid. On the contrary, patients suffering from heart-disease may be delivered without any grave accidents, and recover almost completely.

Occasionally the malady does not seem aggravated by pregnancy, and remains as it was without this complication. The treatment is the same as for other cases of heart-disease not complicated by pregnancy, but the new element necessitates the idea of another remedy—abortion or premature labour. In regard to the question whether one is authorised

in provoking abortion in a patient four or five months pregnant, presenting all the signs of severe heart-disease, which threatens life, and cannot but increase with the progress of pregnancy, no positive answer can be given. The dangers which surround the remedy itself are the cause of the doubts and hesitations, which perhaps the future will decide.

Again, in a patient advanced at least seven and a half months in a similar condition, is it necessary to provoke premature labour? Most practitioners incline to the affirmative. In fact, if art do not intervene, death is almost certain, both to the mother and the foetus. If art step in, there is less chance for the foetus, whose life is, however, seriously compromised already; but the preservation of the mother's life is more probable.

M. Duroziez thinks that, in all women affected with serious heart-disease, where the symptoms are general, premature labour should be induced; and even where there are no general symptoms, if there be other children living, it is a question whether labour should not be induced.

LUCAS-CHAMPIONNIÈRE ON THE UTERINE LYMPHATICS AND THEIR INFLUENCE IN UTERINE PATHOLOGY.—In the author's concluding article in the *Archives de Tocologie* for October 1875, he says that above everything must we bear in mind prophylaxis, and avoid the least local accidents to the neck of the uterus, not injuring it by unnecessary manipulation. Delivery once accomplished, it is well to see that the uterus be clear of putrid matters, but it is important not to irritate it.

Excessive cleanliness in the form of washing, injections, extraction of clots, is as harmful as excess of negligence. With the theory of puerperal poison, it will suffice to establish a current of water in the uterus to give a title to prophylaxis. Nothing can be more contrary to that which we every day observe.

When labour is prolonged, producing compression of the neck, or the vagina, it is wise to aid the forces of nature by the judicious and timely application of the forceps. When labour has been natural or terminated artificially, if any painful conditions arise, they ought to be attacked without delay. Revulsives and evacuates are here of great importance.

The value of sulphate of quinine against these conditions has been wrongly estimated, especially on account of too small doses having been employed.

[It is impossible to do more than very briefly indicate the author's conclusions. The articles are well worthy of perusal.—*Rep.*]

LEOPOLD ON THE HABITUAL DEATH OF THE OVUM AND ITS ARTIFICIAL EXPULSION; PATHOLOGY OF THE PLACENTA AND THE UMBILICAL CORD.—In a communication occupying sixty pages (*Archiv für Gynäkol.*, Band 8, Heft 2) embodying much original observation and literary research, the author, after fully discussing the subject in all its details, concludes that the habitual death of the ovum may be due to various causes; viz., *a.* Syphilis in the parents; *b.* Anæmia or blood-anomalies in the mother; *c.* Chronic disease of the uterus, or uterine irritation; *d.* A general individual irritability; *e.* Inherited disposition; *f.* Changes in the placenta and umbilical cord.

The rational treatment can only consist in obviat-

ing the cause. With this view antisymphilitic treatment, strengthening the system, curing local disease, etc., are the indications to be followed. Artificial expulsion of the ovum two weeks before the usual termination by death will often succeed in procuring a living child. The exact time for inducing labour must depend upon the condition of the foetus as evidenced by the examination of the foetal heart, assisted also by the history of previous pregnancies, and the probable cause of the premature death.

BARDY-DELISLE ON A CASE OF CÆSAREAN SECTION.—In the *Annales de Gynécologie*, November 1875, Dr. Bardy Delisle narrates an instance where the patient recovered; the child being extracted alive, and dying five days after birth from pneumonia.

The patient, aged nineteen, primipara dwarfish in stature, had a pelvis the antero-posterior diameter of which measured only five centimètres (1.965 inches), the sacrum forming a prominence in place of a concavity. Labour had already set in. Chloroform was administered. The usual incision was made; severe hæmorrhage occurred, but ceased after the extraction of the child and placenta, the uterus contracting immediately. The peritoneal cavity was sponged out and the wound closed by deep sutures; the peritoneum not being included. Feverish symptoms were present the first few days, but she convalesced perfectly.

The child, a male, well-formed and developed, progressed favourably the first three days, but succumbed to pneumonia on the fifth day, probably induced by exposure at an open window.

TARNIER ON THE EMPLOYMENT OF IODOFORM IN VAGINISMUS.—In the *Journal de Médecine et de Chirurgie Pratiques*, M. Tarnier relates a case of much interest where iodoform succeeded perfectly in relieving vaginismus.

A woman aged thirty-two, married seventeen years, was affected with an extreme hyper-æsthesia of the vulva, producing pain on walking, coitus being extreme torture. There was no lesion of the vulva or neck of the uterus. The vulval aperture and the labia minora were dusted over with iodoform powdered, and a few hours afterwards the parts were insensible. Coitus was effected with scarcely any pain. A tampon of cotton-wool covered with the powder was placed between the lips of the vulva, and succeeded admirably.

M. Tarnier also employed iodoform in a most intolerable fissure of the anus, which had resisted all the narcotics and astringents usually employed in such cases. After a single application the pain diminished considerably, and a cure was effected in a few days.

WILLIAMS ON THE MUCOUS MEMBRANE OF THE BODY OF THE UTERUS.—Dr. John Williams (in the *Obstetrical Journal*, November, 1875), states that in many different animals the mucous membrane of the body of the uterus possesses a very highly developed muscular structure; that is, a considerable portion of the thickness of the uterine wall is formed by muscularis mucosæ—a stratum of muscular fibre-cells resting upon a layer of areolar tissue named 'submucous.' The submucous tissue has not been found in the human uterus. The changes which take place from month to month in the uterus—that is, the removal of the so-called mucous membrane, and its renewal by proliferation of the superficial

laminae of the muscular wall, show that a portion of that muscular wall is muscularis mucosae.

Dr. Engelmann (see LONDON MEDICAL RECORD, December, 1875, pages 696-7), controverts this view, as a physiological improbability to which we can find nothing analogous in the human system; but, as Dr. Williams states, upon merely theoretical and insufficient data.

ARTHUR W. EDIS, M.D.

FRANCIS ON THE OBSTETRIC FORCEPS AS A TIME-SAVER.—In a paper recently read before the Massachusetts Medical Society (*Boston Medical and Surgical Journal*, July 1, 1875), Dr. G. F. Francis, after reviewing the opinions of Simpson, Beatty, Collins, and other well-known authorities, alludes approvingly to Dr. Hamilton's (of Falkirk) experience, and concludes that lapse of time in the second stage of labour brings increasing danger: secondly, that the forceps is not necessarily a dangerous instrument; and finally, that the experience of those who have used the forceps freely, to save time and avoid danger, is by no means unsatisfactory.

TAYLOR ON THE TREATMENT OF CONTRACTED PELVIS.—At a recent meeting of the New York Academy of Medicine, reported in the *New York Medical Journal*, Nov. 1875, Dr. Taylor said that, in the consideration of the treatment of contracted pelvis, he would divide the subject into two parts: first, that in which the contraction was from two and a half to four inches; and, secondly, that in which the contraction was from two and a half to one and a half inch. He proposed to consider only the first class of cases on the present occasion; and, in their treatment, he thought that craniotomy was not indicated for the delivery of the patient in the great majority of cases, but that the choice rested between the forceps and version. He presented two deformed pelves, one of which was known as the uniformly contracted pelvis, and the other as the flat pelvis. He presented also a foetal head delivered by the forceps, in which the indentation caused by the promontory of the sacrum was nearly an inch in depth. The notes of two cases were read. In one the pelvis was of the simple flat form, and not rickety. The patient was aged twenty-three, and an inmate of Bellevue Hospital. She was delivered in thirty minutes by means of version. The second case was one of uniformly contracted pelvis, in which the antero-posterior measurement of the brim was three and three-quarters inches. In this latter case the cervix was only slightly dilated; and, contrary to the opinion of the majority, Dr. Taylor introduced the forceps within the undilated os uteri, and delivered the head of the child with considerable effort. The forceps that he used was after the model of Ritgen, but it had an extremely narrow blade, measuring not over two inches in width. If the forceps proved unavailing to apply the requisite force, the woman might be safely delivered by means of version.

Dr. Taylor said that he was of opinion that induced labour at the seventh or eighth month, in cases of contracted pelvis, was in many occasions indicated for the welfare both of mother and child.

At a subsequent meeting Dr. Isaac E. Taylor said that he did not agree with Dr. Goodell, of Philadelphia, who maintained that the neck of a foetus would stand a tractile force of 150 pounds before it would separate from the head. In Dr. Taylor's hands several cases suffered decapitation, leaving

the head in the uterus when a force not equivalent to 150 pounds had been exerted. He was of the opinion, also, that the lateral diameter of the foetal head could be reduced one half-inch by the use of the forceps, and no special danger ensue. He thought also, in a similar manner, that the antero-posterior diameter could be reduced seven-eighths of an inch with safety. Dr. E. R. Peaslee was of the opinion that Dr. Taylor's position could not be controverted. The subject was one of the most difficult to understand in the whole range of obstetrics, and one in which there was the greatest diversity of opinion. Dr. Hanks related a case which bore on the subject under discussion. He was called to see a patient in January, 1869, in which labour had been in progress for six hours before his arrival. He waited for four hours, and no additional advance was made, though the vortex had entered the superior strait. He found the patient to have a flat pelvis; and, by the aid of the forceps, he delivered the woman, after two hours, of a still-born child. The patient in a few months again became pregnant, and at the end of the eighth month induced labour delivered a still-born child by means of version. The patient again became pregnant, and at the end of the eighth month he again induced labour, but proposed to use the forceps, believing it would be productive of better results. On that occasion, a child was delivered, which lived for a few days and died of inanition. The patient again became pregnant, but passed into other hands. She was delivered of a still-born child, and in a few days afterwards died of broncho-pneumonia.

GOODSELL ON THE TENSILE STRENGTH OF THE FOETAL NECK.—Dr. Goodell says, in the *Philadelphia Medical Times*, I saw the strength of the child's neck put to a crucial test, and the result amazed me. I frankly confess that had I not been an eye-witness I should have been a doubter. It was a case of a primipara with flat pelvis and a large but putrid foetus. After craniotomy had been performed, a further obstruction to the delivery lay in the bloated chest and belly. Before this second complication was recognised, each one of the four physicians present, including myself, took his turn at the forceps. From a natural rivalry, the traction thus necessarily made upon the neck of the foetus by three of us in succession was no child's play. But that made by the fourth gentleman exhibited so much power and originality, that I shall here describe it. He turned the woman over on her side, brought her hips to the edge of the bed, and applied Hodge's forceps. He next carefully tucked a sheet around the lock of the instrument, removed his shoes, sat in a chair, and placed one foot across the perinaeum, the other across the vulva. He then grasped the handles, straightened out his body, and pulled with all his might and main, making every muscle in his body quiver with the effort. Yet, in spite of the enormous strain brought to bear upon the neck of the child, it was simply lengthened out, but not broken. The cranial stump was brought down to the outlet, but it literally sprang back at every intermission of the traction. This behaviour of the head, or rather what was left of it, was in fact the first clue that led to the discovery of the obstructive size of the child's body.

BARRETT ON VICARIOUS MENSTRUATION PER RECTUM.—A case of vicarious menstruation per

rectum is related by Dr. E. C. Barrett, of Jerusalem, Virginia, in the *Virginia Medical Monthly* for December. He was called in 1868 to Miss A., aged about seventeen, whom he found to be suffering from an attack of bilious remittent fever. He found that his patient had habitually been the subject of a vicarious discharge of blood from the bowels in the place of the regular monthly catamenia, a peculiarity that had come upon her about the time of puberty. She had never menstruated before the discharge made its appearance; neither had she since. He had known her long before he was called to see her professionally, and, from her seeming perfection of development, with a remarkable voluptuousness of physique, coupled with a most cheerful temperament, he had no reason to suspect that anything abnormal existed. The discharge came on regularly once in every twenty-eight days, and lasted for three or four days.

She was subsequently married, and in due time was confined of a well-developed male child. Dr. Barrett attended her through the period of her confinement, and from the beginning of her lying-in to her getting up there was nothing which was not in perfect keeping with the usual laws of all healthy child-bearing women. The uterus passed through the various changes incident to child-bearing, and the mother herself furnished to her child all the elements of a healthy nutrition. In the course of fifteen months the vicarious discharge made its appearance again, and continued with its former periodicity and regularity till its cessation announced a recurrence of pregnancy. And thus she has gone on, alternating as above described, till she has now been the mother of three children.

RECENT PAPERS.

- Urocytic and Urethral Diseases of Women. By Dr. A. J. C. Skene. (*New York Medical Record*, December 4.)
- The Causes, Prevention, and Cure of Laceration of the Perineum. By W. Goodell, M.D. (*Philadelphia Medical Times*, November 13 and 27.)
- Case of Inversion of the Uterus, with Reduction by White's Method. By Dr. E. C. Cox. (*New York Medical Record*, December 18.)
- Sarcoma Uteri. By Dr. A. R. Simpson. (*Edinburgh Medical Journal*, January, 1876.)
- Laceration of the Perineum. By Dr. J. Young. (*Ibid.*)
- Pedunculated Fibroid Tumour of the Uterus complicating Delivery. By Dr. T. G. Roddick. (*Canada Medical and Surgical Journal*, December, 1875.)
- What is to be done with the Child when the Mother has Variola, during Lactation? By Dr. Spanner. (*Berliner Klinische Wochenschrift*, December 13.)
- Laparo-Hysterotomy. By Dr. Billroth. (*Wiener Medizinische Wochenschrift*, January 1.)
- On the Diagnosis and Treatment of the Curable Forms of Fibroid Tumours of the Uterus. By Dr. Meadows. (*Obstetrical Journal*, December 1875.)
- Four Cases of Ovariectomy. (*Ibid.*)
- Of the Hypertrophic Elongation of the Vaginal Portion of the Neck of the Uterus. By Dr. Dupuy. (*Le Progrès Médical*, December 18.)
- On the Efficaciousness of a Milk Regimen in the Albuminuria of Pregnant Women, and its Indication as a Preventive Treatment of Eclampsia. By Dr. Farnier. (*Ibid.* December 11.)
- At what Time should Ligature of the Umbilical Cord be performed? By Dr. Budin. (*Ibid.* December 25.)
- On Laceration of the Gravid Uterus. By Mr. Ashburton Thompson. (*Obstetrical Journal*, January 1876.)
- On the Tolerance of Sedatives in Malignant Uterine Disease. By Dr. W. H. Day. (*Ibid.*)
- A New Instrument for Ready and Effective Use of the Double Current in the Treatment of Suppurating Cavities and in Pelvic Drainage. By Dr. Bieby. (*Boston Medical and Surgical Journal*, November 18.)

OPHTHALMOLOGY AND OTOTOLOGY.

GAYAT ON VISION AT EXTREME DISTANCES.—It has long been a recognised fact that, although the method now in use for determining the *punctum remotum* is sufficient for all ordinary clinical purposes, yet a soldier who could read no. xx. at twenty feet, might be utterly unable to become a skilled artillerist or a picked rifleman. In fact, to be able to see an object at a certain distance, and to be able to distinguish it from another resembling it, are two very different things; and in order to formulate the conditions which determine visual acuity at great distances, Dr. Gayat (*Annales d'Oculistique*, September and October, 1875) instituted a series of experiments. In the course of these observations, which were made upon the vision of different individuals for extreme distances over water as well as upon land, it was invariably found that vision was more accurate as regards details of objects when looked at upon land; and although the boatmen who accompanied Dr. Gayat could always see better than he could when on the water, yet even their answers were more ready and more accurate when their sight was tested along the shore and when they were on land. Even when the water appeared perfectly calm, there was an almost imperceptible motion of the boat which interfered with the accuracy of vision, whether the observer was on the shore, or the object was on the shore, and the observer was upon the water.

The extreme range of vision possessed by savage people is a matter of common observation; and, in the case of the Arabs of Algeria, this has been attributed by Dr. Furnari to the fact that the refraction of their eyes is hypermetropic. In a second series of observations carried on over the expanse of the little Sahara Desert, it was found that the difference of visual acuity was very marked in different individuals who were supposed to possess the same average visual power. The principal causes of many of the differences appeared in the course of these experiments to be the intensity of light and the incidence of light, so that it made a great difference whether the object was directly illuminated by the sun or by diffused light; the colour of the object, and the uniformity or the irregularity of its surface, and its dulness or its metallic lustre; the position of the observer, or of the object, and the nature of the horizon, especially whether there were a background of houses or of trees, which would admit some comparison with the object. These observations make it abundantly clear, says Dr. Gayat, that the results of experimental inquiry differ widely from those obtained in this matter by mathematical calculation; and when we take into consideration the influence of habit and of education upon distant vision—so long, for instance, as a sailor can readily distinguish the mast of a vessel when a landsman can as yet see nothing—it must always be a matter of great difficulty, even if it be possible, for us to determine exactly the limit of vision for extreme distances.

CUIGNET ON XEROPHTHALMIA.—This curious affection of the conjunctiva, which appears to be comparatively rare in this country, is frequently met with in some other parts of the world; and espe-

cially is this the case in Algeria, where Dr. Cuignet was stationed for some years. In this colony, where granular ophthalmia thrives and works much damage amongst the poor Arabs and the destitute Jews, xerophthalmia is very common; and Dr. Cuignet has published the result of his experience in the *Recueil d'Ophthalmologie*, July, 1875. In his opinion, this condition is not a disease *sui generis*, but is merely the result of one or more different diseases of the conjunctiva; and he defines it as being a fibrous transformation of the conjunctiva and of the corneal epithelium, with thickening, opacification, retraction, and more or less complete loss of sensibility.

The affection may be partial, or it may invade the entire conjunctiva; it may be met with in two or three different stages, and in the two eyes of the same individual. As regards the two varieties of the affection which are mentioned by Wecker, viz. xerosis glabra and xerosis squamosa, Dr. Cuignet considers that the latter form occurs only in the cornea, and that if it be a variety at all, it derives its characteristics from the tissues in which it appears, while xerosis glabra affects the conjunctiva in preference. The mechanism of the affection appears to be as follows: after one or more attacks of some form of ophthalmia the tissues remain congested, and their blood-vessels increase in size and in number, so that infiltration and thickening of the parts ensue; as these changes progressively take place, the secretive organs become destroyed, and the surrounding tissues become dry and assume the nature of fibrous tissue; and as this last transformation occurs the eyelids become distorted, and their movements impaired, at the same time that the patient may become disfigured by entropium. Dr. Cuignet considers that the above changes are analogous to those which take place in the liver, and which are spoken of as cirrhosis. He does not agree with those who speak of xerosis as being due to occlusion of the lachrymal canals; and in his own experience he has met with these several causes: entropium, granular ophthalmia of long standing; repeated attacks of scrofulous ophthalmia; staphylooma of the cornea, and ectropium. In the two latter instances, however, the affection has assumed a partial form only; and he is quite unable to support the opinion of Vidal, and of some other authorities, which would trace the origin of xerosis to some local fault of innervation.

As regards treatment, Dr. Cuignet has little or nothing to suggest. In its earlier stages, and when the affection is partial, some benefit may result from treatment—as, for instance, by the removal of an entropium; but, in the majority of instances, the poor inhabitants who are the subjects of the extreme degrees of the affection will not, or at least do not, present themselves until all reasonable chance of any good resulting from treatment has long passed away.

AGNEW ON CANTHOPLASTY AS A REMEDY FOR CERTAIN DISEASES OF THE EYE.—The author (*Annales d'Oculistique*, Sept. Oct. 1875) considers that an operation, such as he here describes, is the best remedy for the various chronic affections of the cornea and of the conjunctiva; for all such cases, in fact, which do not readily yield to treatment of the ordinary kind. In his opinion it is extremely difficult, if not impossible, by ordinary means, to secure the absolute quiet and immobility of parts which are essential to the speedy repair of corneal ulcers, or to

the complete removal of corneal opacities. His method of procedure is as follows.

Anæsthesia must always be produced, inasmuch as the operation is a severe one. The eyelids are to be separated with the finger and thumb, and their outer commissure is then to be freely divided as far outwards as the conjunctival *cul-de-sac*; this may best be done by a pair of strong scissors; the wound is horizontal, and its length will depend upon the attachment of the conjunctiva. The upper eyelid is then drawn upwards and inwards, until the external tarsal ligament is put upon the stretch; the blades of the scissors are then pushed vertically upwards, and are made to include this external ligament close to its attachment to the orbital margin, and to divide it by one stroke; if the tissues be put properly on the stretch, this is easily done. The ligament of the lower eyelid is not to be touched, inasmuch as its division might lead to eversion of the tarsal cartilage, and so cause an ectropium. When all bleeding is arrested, three or four sutures are inserted, care being taken that they do not include the margins of the divided ligament. The immediate effect of the operation is to elongate the palpebral fissure, and to prevent the upper eyelid from exercising the same pressure upon the cornea as before. In a few weeks, there is nothing to be noticed except that the angle of the commissure is less marked, and that the eyelids are not so closely or so firmly adapted to the surface of the eyes.

Dr. Agnew has performed this operation in 191 cases, and he recommends it for granular lids with pannus and with ulcerative keratitis; it has proved of especial service in cases of recurring phlyctenular ophthalmia; and in extreme cases he advises that it should be done for acute purulent ophthalmia, as much as a method of depletion as to diminish pressure upon the cornea and the retention of discharges.

BOWATER J. VERNON.

GRUBER ON MYRINGITIS.—In the September number of the *Monatsschrift für Ohrenheilkunde* will be found a fairly exhaustive lecture on myringitis, by Professor Gruber, of Vienna. After mentioning the usual symptoms of the affection, he describes others which are rarely met with, affecting tissues close to the tympanic membrane or considerably removed from it, and which have their causes either in the real changes in these tissues, or must be explained by reflex action. The one he particularly notices is that described by Lincke, who mentions having met with patients complaining of a sensation which they likened to the fluttering of an insect before the ear, lasting for a short time, then passing away for days, and again coming. Professor Gruber has met, he says, with a patient who described this subjective symptom to him in the same terms. On examining the membrane of this patient, he satisfied himself, by closely watching the posterior segment, where a movable cicatrix was seen, that this segment moved regularly outwards and inwards. This continued for ten minutes, and, on its cessation, the patient said the subjective noise stopped. During the time of movement of the membrane, Professor Gruber was able to determine objectively, by auscultation, the noise complained of. He agrees with Lincke in believing the cause to be a spasmodic contraction of the tensor tympani. He says this muscle is liable to spasmodic contractions in other conditions besides myringitis; but does not particularise the affections in which they occur.

Gruber finds that 95 per cent. of the cases of primary myringitis which have come under his observation are combined with perforation of the membrane.

W. LAIDLAW PURVES.

RECENT PAPERS.

- Metastatic Choroiditis. By W. W. Seely, M.D. (*Ohio Clinic*, November 20.)
 Living Larvæ in the Ear, and Method for their Destruction. By C. H. Burnett, M.D. (*Philadelphia Medical Times*, November 27.)
 Tumours of the Optic Nerve and Orbit. By Dr. Christensen. (*Hospitals-Tidende*, December 29.)
 On Glaucoma. By Dr. Arlt. (*Allgemeine Wiener Medizinische Zeitung*, Nos. 49, 50, 51, 52, 1875.)
 Operative Treatment of the Results of Trachoma. By Dr. G. von Oettingen. (*Dorpat Medizinische Zeitschrift*, Band vi. Heft 1.)
 Two Cases of Persistent Arteria Hyaloidea. By M. Larsen. (*Ugeskrift for Læger*, December 28.)
 On Periphoro-linear Cataract-Extraction. By Dr. J. Hirschberg. (*Berliner Klinische Wochenschrift*, January 1.)
 On Ectropion of the Lower Lid. By M. Gillet de Grandmont. (*La France Médicale*, 1875.)
 On Ophthalmology in Italy. By M. S. Grand. (*Lyon Médical*, December 19.)
 Determination of the Perception of Colours. By Dr. Landolt. (*France Médicale*, December 25.)

DERMATOLOGY.

BERNHARDT ON SCLERODERMA OF ADULTS.—Drs. Bernhardt and Schwabach publish the following three cases in the 47th no. of the *Berliner Klinische Wochenschrift* for 1875.

Case 1.—An unmarried woman, thirty-six years old, began to suffer from weakness in the legs, followed by swelling and stiffness of the fingers. There was no actual pain, except some headache, but an unpleasant feeling of cold and stiffness. When seen in October 1874, about a year after the symptoms began, both the hands were swollen, the skin white and somewhat livid in colour, smooth, hard and very cold to the touch. The backs were more affected than the palms. The fingers could neither be bent nor extended fully, so that the patient found great difficulty in playing the piano. The upper part of the chest as low as the fourth rib was in a similar condition, the skin being smooth, stretched so as to show lines like those of the abdomen after pregnancy, and incapable of being raised into folds; but here the colour was reddish. No other part of the skin was affected. The urine was normal, and the general health good. In December the ankles swelled for a week or two, still without albuminuria. At the end of January, 1875, there was no improvement, and the continuous galvanic current was then applied to the neck, and faradisation to the hands. By the autumn the hands were rather better but the induration of the skin had spread further on the thorax, nearly to the ensiform cartilage. The patient also found that it had become difficult to open the mouth, and in this condition she was at the time of the report (Nov. 1875).

Case 2.—A married woman, aged thirty-four, came first under observation in May, 1875. For several years she had suffered from cold and numbness of the fingers, with slight but obstinate sore places on the knuckles, and lately the fingers had begun to contract. The lower two-thirds of both arms above the

elbow, and both fore-arms, showed the characteristic appearance of scleriosis—the skin brownish-red, here and there covered with minute scales, smooth, tense and adherent. The hands were less affected, but the nails, especially of the right hand, were small, curved, irregular and brittle, and the entire ungual phalanx of the thumb was atrophied. In the other hand, the ulnar fingers were most affected in the same way.

[The report notices that in the left hand the ring finger is 'abnormally' longer than the index. According to Henle and Ward this would be *normal*, though Weber says the opposite. The fact is, that the relative length of the second and fourth digits varies; though in England at least, the latter appears to be usually the longer. See an article on the subject by Professor A. Ecker of Freiburg in Breisgau (*Archiv für Anthropologie*, Bd. viii. S. 67) quoted by Mr. J. C. Galton in *Nature* for November 4, 1875.—*Rep.*]

There were several small ulcers on the fingers, as well as scars of others which had healed. Except for the pain these occasioned, the patient would have been able to write and even dress herself; for the bend of the joints was in each limb the part least affected, and movement was only somewhat hindered by the surrounding induration of the skin. The skin of the face, especially about the mouth and chin, was dark and somewhat stiffer and denser than natural, so that the patient could not open her mouth wide. The sensibility of the affected parts to touch, pain, temperature, and electrical stimulus was unaltered; but, as in the previous case, the sclerous integument was found to conduct a galvanic current much better than the healthy skin around.

Except an attack of small-pox, the patient had suffered from no previous illness, and the most minute examination discovered no other disturbance of health than the scleroderma itself.

Case 3.—A strong and healthy man, aged twenty-seven, suffered for some years from varicose veins of the left leg. In the winter of 1873-4 he struck the skin of the same side, and a sore resulted which remained long unhealed. During the next twelve months the hair gradually fell off from that leg, and the skin became irritable, hard, and fixed. At the beginning of 1875, almost all the left leg, from the ankle upwards, and more than half the thigh (except where the varicose veins occupied the surface), showed the characteristic features of scleroderma [described, as in the previous cases, with wearisome minuteness and endless repetition], the only feature specially worthy of note being that in the thigh the affected surface was below the level of the sound. The inguinal glands were not swollen. The patient felt the whole thigh squeezed as if in a tight bandage, but suffered no pain; and normal sensibility over the affected region was retained, as in the preceding cases, with the same improved conductivity of the diseased skin. As in other cases, the partial immobility of the limb depended simply on the state of the integument, and the muscles underneath responded to electric or other stimuli as usual. There was nothing in the man's family history to throw light on the complaint; he was not syphilitic; and the only fact his doctor could elicit was that, in his trade of wine-bottler, he had opportunity of drinking more wine than other people, and it so happened that the wines he had to do with were of the strongest sorts.

This patient had not been treated at the time when

his case was published. The other two had been faradised and galvanised in hope of producing a more active circulation in the skin, by stimulating the muscles underneath, and irritating directly with the faradic brush. The continuous galvanic current was also applied to the neck as a means of acting on the cervical sympathetic. Warm baths were prescribed, and Fowler's solution was taken internally. Slight improvement took place in the hands of the second patient under this treatment, but the disease spread over her chest.

The authors call attention to the precedence of oedema in two of these cases and varix in the remaining one: and to the participation of nails and bones in the morbid condition in the second case, as in some related by 'French observers.'

These three cases are preceded by a reference to the previous literature of the subject in the chapter by Kaposi in Hebra's *Handbuch*, which treats of scleroderma. This has already appeared in vol. iii. of the Sydenham Society's translation, by Mr. Waren Tay, pp. 105, 106, and it may be useful to give here the additional cases mentioned in the present article. They are as follows:—

1869. *Leisring*: 'Beitrag zur Lehre von der Sklerodermie der Erwachsenen,' u.s.w. *Deutsche Klinik*, 1869, nos. 3, 4, 6, 7, 9.

„ *Poncet*: 'Cas de Sclérodémie, Clinique du Dispensaire général de Lyon.'

1870. *Roszbach*: 'Addison'sche Krankheit und Sklerodermie,' Virchow's *Archiv*, Band i. S. 506.

1871. *Neumann*: 'Beiträge zur Kenntniss der Sklerodermie,' *Wien. Med. Presse*, no. 43. Also references in Virchow and Hirsch's Jahresbericht for this year (p. 516) to cases by Piffard, Fagge, and Curran.

1872. *Ibid.* p. 588: cases by *Hiller*, *Hillairet*, and *Pasturand*.

1873. *Hallopeau*: 'Note sur un cas de sclérodémie avec atrophie de certains os et arthropathies multiples.' (*Soc. de Biologie de Paris*, 7 Déc. 1872.)

„ *Moore*: 'A case of sclerema.' (*St. Barth. Hosp. Rep.* iv. p. 71.)

1874. *Meillet*: 'Des malformations permanentes de la main.' Here are given cases communicated by *Bell* and *Liouville* to the Société de Biologie de Paris.

„ *Wolff*: 'Scleroderma maligna.' [This case, however, turned out to be an example of true cancer of the skin of the variety described by Velpeau as 'squirrhe en cuirasse.' See reports in LONDON MEDICAL RECORD for May 13, 1873, and November 25, 1874.]

„ *Lagrange*: 'Contribution à l'étude de la sclérodémie avec arthropathie et atrophie osseuse.' [See abstract in LONDON MEDICAL RECORD for February 17, 1875, p. 105.]

P. H. PYE-SMITH, M.D.

RECENT PAPERS.

Proofs furnished by Pathology of the Deathless Nature of Herpes. By M. J. P. Meguin. (*La France Médicale*, December 4, 1875.)

The Treatment of the Scrofulides (Lupus). By Dr. Piffard. (*Practitioner*, December 1875.)

Concerning Porrigo. By Dr. Luton. (*Le Mouvement Médical*, December 11.)

Tinea Favus. By M. Lailler. (*Gazette des Hôpitaux*, December 16.)

On Impetigo. By M. Guibout. (*L'Union Médicale*, December 18.)

Two Cases of Elephantiasis Arabum. By Dr. G. W. Jenks. (*Detroit Review of Medicine*, December, 1875.)

Psoriasis of the Sole of the Foot. By Dr. Colomiatti. (*Gazette delle Cliniche*, November 9.)

Remarkable Case of Rheumatic Erythema. By Dr. E. De Paoli. (*Ibid.* November 23.)

The Use of the Scraper in Skin-Diseases. By Dr. Hans Hebra. (*Wiener Medizinische Wochenschrift*, December 18.)

A Peculiar Case of Zoster. By Dr. Kaposi. (*Wiener Medizinische Wochenschrift*, January 1.)

REPORTS OF FOREIGN SOCIETIES.

ACADEMY OF MEDICINE IN PARIS.

November 23. *Metric Ophthalmoscope*.—M. Giraud-Teulon presented an instrument, the metric ophthalmoscope, intended to determine the refraction of the eye. It was distinguished from the similar instruments of *Lehring*, *Cohn*, *Knapp*, &c., by the following peculiarities. 1. It was the first ophthalmoscope of this kind constructed according to the metric system. It contained, in a disc, a series of twenty convex glasses. Each of the glasses was equivalent to the preceding one, augmented by a half, which gave 0.50, 1, 1.50, 2, 2.50, &c. 2. By laying on these glasses an additional concave glass of 10.50 dioptics. The same series of contrary signs or negatives (concave glasses) was obtained. A single disc of very limited dimensions, on which moved a single additional glass, therefore gave a series of forty-one glasses (twenty convex and twenty-one concave), which made the single-disc refracting ophthalmoscope the most complete hitherto constructed. 3. The metric ophthalmoscope contained a series of glasses with intervals of regular refractions, whilst in the instruments used up to the present time it had been necessary, on account of the restricted number of the glasses, to have irregular and compulsorily arbitrary intervals.

Myopia.—The discussion on myopia was continued. M. Giraudeau maintained the modern theory of accommodation by the ciliary muscle. M. Jules Guérin would place no faith in it, until he had been shown the crystalline lens curved by the action of the ciliary muscle.

December 7. *Myopia*.—M. Guérin endeavoured to establish that myopia was but a permanent condition of the accommodation of the eye to the sight of near objects; that the accommodation of the eye to the different distances of the field of distinct vision, was a phenomenon in which the whole muscular system of the eye took part, and which resulted secondarily from the appropriation of all the parts of the ocular globe, modified by this system; that the doctrine of the change of the form of the crystalline lens was contradicted by all the circumstances, all the degrees, all the modifications of accommodation, of which it had maintained one part and suppressed many others; that the origin, the characteristics, and the treatment of myopia, showed that it was only a modification in form of strabismus, like the other visual anomalies, astigmatism, muscular asthenopia, amblyopia, etc.; all were produced by different habits, different degrees, different distribution of muscular retraction. M. Maurice Perrin accused M. Guérin of confounding adaptation with accommodation. The present theory of accommodation, as it had been formulated by Donders, rested on an unassailable foundation, and was beyond discussion. Myopia

was intimately connected with accommodation. There was deformity of the eye in myopia with atrophy round the optic nerve, of which one species was, in fact, produced by muscular retraction; and M. Guérin had the merit of having made myopia thoroughly known, and of curing it by myotomy; but he had committed the mistake of generalising from special and exceptional facts.

December 14. *Aconite*.—M. Oulmont read a paper on aconite, its preparations, and aconitine. Struck by the inequality in the action of the various preparations of aconite, and the dangers to which it might expose practitioners not well accustomed to handle so powerful a drug, M. Oulmont undertook a re-examination of the pharmaco-dynamic and therapeutic properties of this drug. From experiments on the human subject and on dogs, he drew the following conclusions. The action of aconite is variable, 1. according to the part of the plant employed; 2. according to whence the plant comes; 3. according to its preparation. It might be generally premised that the leaves, stalks, flowers, and seeds have an uncertain and almost nugatory action; that the roots contain the active principle, and that they differ according to their habitat. The garden aconite is less powerful than that of the Vosges and the Swiss mountains; therefore the alcoholic tinctures of flowers, stalks, etc., may be given to animals in doses of from 30 to 40 grammes ($7\frac{1}{2}$ to 10 drachms), and to the human subject up to 20 grammes (5 drachms) without appreciable effect. The alcoholic tincture should only be prescribed in small doses on account of the unequal character of its action, which is due to the presence of the vegetant water in the roots. Tinctures of aconite are weak preparations, those of the root being more so than those of the leaves or the stalk; both have an unequal and uncertain action. The extract of leaves of the French *codex*, administered in doses of from five to seven grammes, produces only very moderate physiological effects. The extract of the dried roots of the Vosges aconite is much stronger, its action is equal and uniform, it is easy to calculate the dose, and it is the preparation to which preference should be given. It may be administered in doses of from two to three centigrammes (0.03 and 0.045 grain) at the outset, and gradually to fifteen centigrammes, without fear of accidents. The aconite of Dauphiné, and the Swiss aconite in particular, are to be rejected on account of the violence of their action and the difficulty of apportioning the dose. Aconitine possesses a very powerful action, at the same time well defined and regular; but on account of its violent effects, and perhaps the yet ill-determined varieties of this alkaloid, it can only be administered with the greatest care. Aconitine exercises physiological and therapeutic effects in doses of a quarter of a milligramme. It may gradually be increased to a dose of one and even two milligrammes a day without any ill effects.

ACADEMY OF SCIENCES IN PARIS.

November 8. *Unipolar Electric Excitation*.—M. Chauveau presented a note on the comparison of the unipolar excitations of the same sign, positive or negative. This note was the sequel of that published in the report of the Paris Academy of Sciences (LONDON MEDICAL RECORD, No. 6, Dec. 5, 1875).

The results obtained were these: 1. In the case of regularly increasing unipolar excitations the action of the positive pole, measured by the size and the duration of the contractions, increases in a constant manner with the intensity of the current, while the muscle has not attained the maximum of effect which it can produce. The increase of this action of the positive pole is often regular, like the increase of the current itself. At other times the increase, at first very rapid, becomes less and less so in proportion as we get near to the maximum of the contraction of the muscles. 2. The action of the negative pole increases at first with the current, and thus attains more or less rapidly, sometimes at once, a value beyond which the increase becomes slow, even stops altogether, or even changes into a weakening; which, in certain conditions, not, it is true, altogether physiological, arrives at an almost complete neutralisation of the activity of the current. 3. These two propositions, deduced from the study of unipolar excitation on the frog, may also be applied to man and the mammalia with some modifications, which will be subsequently pointed out. 4. In the last-mentioned classes the study of the influence exercised over sensibility by unipolar excitations gives results, absolutely opposite to the preceding, so that the same constructions may represent these results, if the positive curve be taken for the negative, and *vice versa*. As a practical consequence, applicable to the medical employment of electricity, we see that there is but one means of manipulating the current of the pile with regularity; that is, to induce unipolar excitation with the positive pole to act on the motor nerves, and with the negative pole, if it be required, to call sensibility into action.

Electro-capillary Currents produced by Mineral Caustics.—A note on this subject was presented by M. Onimus. According to the writer, there would be reduction of the metallic caustics in the tissues, as in M. Becquerel's experiments; wherever the metallic salt comes into contact with a membrane there is a deposit of metal on one of the surfaces.

Influence of Acids on the Coagulation of the Blood.—In a note on this subject M. Oré said that, if it had been possible to introduce chloral directly into the blood, it was because it is perfectly soluble in water. There are other substances which only become soluble by acids or alcohol, and these bodies may induce coagulation of the blood, since they coagulate albumen. But M. Oré stated that in the living circulatory torrent this effect has not taken place.

The Function of Carbon Acid in the Phenomenon of Coagulation of the Blood.—A note on this subject by M. Glenard was read. MM. Mathieu and Urbain having considered the results formerly presented by the author as inadmissible, he replied by a new experiment which confirmed his opinion as to the innocuity of carbonic acid with reference to the coagulation of the blood.

Function of the Spleen.—A note by MM. Malassez and Picard on the function of the spleen was read. The authors had continued their experiments, but they had divided the nerves on one side of the spleen. The results obtained were the following. The paralysed side always gives blood richer in corpuscles than the other side. The tissue also of the spleen contains more corpuscles on the paralysed side. The same holds good of the blood contained in the liver. This increase of the corpuscles cannot be attributed to the concentration of the blood. After the para-

lysis has lasted two or three hours, much less iron is found in the paralysed side than in the other. We may therefore admit a new formation of blood-corpuscles in the spleen at the expense of the iron contained in it.

December 6. *Pernicious condition of the Blood of Healthy Horses killed by being Stunned or Asphyxiated.*—According to M. Signol the blood left in the body for at least sixteen hours becomes rapidly deadly, if doses of twenty-four drops of it be introduced into goats or sheep. Bacteria and agglutinated corpuscles similar to those found in the blood of animals affected with *charbon* were found, which proved that these signs are not characteristic of *charbon*.

REVIEWS.

Lectures and Essays on the Science and Practice of Surgery. By ROBERT McDONNELL, M.D., F.R.S., Surgeon to Dr. Steevens's Hospital, etc. Part II. The Physiology and Pathology of the Spinal Cord. Dublin, 1875.

The first part of these excellent lectures has not come under the present writer's notice, nor is it referred to in this publication, which indeed is a treatise complete in itself. It consists of three portions. The first of these is a lucid, careful, and critical summary of Brown-Séguard's discoveries and speculations as to the functions of the spinal cord, a task for which Dr. McDonnell is the better fitted, since, in addition to his high qualifications as a surgeon and physiologist, he assisted Dr. Brown-Séguard in preparing his experiments at Dublin, preserved the preparations resulting from those experiments, and repeated many of them. It will not, however, be necessary for us to dwell much on this first part of the work. Suffice it to say that it contains a most clear explanation of Brown-Séguard's doctrines, as opposed to Sir Charles Bell's and Longet's, to those of Schroeder van der Kolk, and others, and of the reasons which have led Dr. McDonnell to accept, along with most other physiologists, those which relate to the function of the central grey matter of the cord in transmitting sensitive impressions, to the decussation of the sensitive fibres near their point of contact with the cord, to the presence of vaso-motor fibres in the cord and their influence on secretion and nutrition, and to the explanation given by Brown-Séguard of the phenomena of the muscular sense and of muscular spasm; while, in common with most writers, Dr. McDonnell reserves his assent to the great physiologist's teaching in regard to the existence of separate nerves for various modes of sensation. The student who wishes to obtain a clear view of the present state of this department of physiology cannot have a more competent or intelligible guide than this little volume. The second portion is an attempt to found on analogy and on deductions from the phenomena of sensation, a new theory as to its intimate nature. He rejects the theory of Brown-Séguard, which assumes a great number of fibres of diverse kinds for the transmission of diverse modes of sensation, a theory which indeed is very difficult to reconcile even with probability. Thus Brown-Séguard, in a most imperfect classification of the various kinds of sensation, has been obliged already to assume eleven different sorts of nerve-fibres; and of course, the more kinds of sensations could be distinguished, the more kinds of nerve-fibres must be

invented or imagined. But it is really very difficult to persuade oneself even of the probability of the existence of different fibres for the reception of the phenomena of touch, tickling, and pain, to say nothing of Brown-Séguard's eight other classes; while, as to evidence of the real existence of such separate fibres there is, of course, none whatever. The separate nature of the fibres which appreciate touch and temperature has been inferred by Herbert Spencer, but from most insufficient data, as Dr. McDonnell shows. In fact, there is no anatomical evidence of any difference between fibres of the most various endowments, and much reason to think that the difference in the phenomena produced by their irritation depends not on themselves, but on the centre with which they are in contact. Our author's theory harmonises well with the facts hitherto observed, and deserves attention as an ingenious and plausible conjecture. It is, that the phenomena of sensation are excited by a kind of undulatory disturbance of the particles of nerve-matter, somewhat similar to the undulatory nature of light and heat, and that the differences in the sensations represent differences in the magnitude or velocity of such undulations or disturbances. Dr. McDonnell supports this view by a very ingenious analogy with certain phenomena of the undulations of heat observed by Professor Tyndall, and shows how it is reconcilable with the various facts of daily life; but, though an interesting and not an improbable speculation, this remains, of course, as yet a speculation only.

The third portion of the work is the one to which readers will probably turn with the greatest interest. It is headed 'Lectures on Physiology applied to Practice.' It commences with a forcible and well reasoned defence of the practice of experimental physiology, or vivisection, as it is now the fashion to call it, and of the moral character of those who practise it, from the charges of useless and deliberate cruelty which are now so freely made. The controversy has proceeded so far, and is now so nearly advanced to an authoritative solution by the medium of the Royal Commission, that it is quite unnecessary here to pronounce any opinion upon it; but we may be permitted to observe that in this, as in most controversies, both sides have pushed their arguments too far. It would be absurd, and would only show an utter ignorance of the history of physiology, to maintain that no useful discovery has ever been made by experiments on living animals; and a perusal of Dr. McDonnell's pages would be quite sufficient to refute such an idea. Nor does it seem more reasonable to charge indiscriminately all those who pursue the great object of human effort—knowledge—in this way with deliberate cruelty. Yet while we have experiments recorded in works of authority, in which animals of all kinds have been put to death by almost every form of privation and violence, and mutilated in almost every way compatible with the preservation of life, it does seem pardonable that those of the public who feel an affection for the lower animals, and who regard them as being equally with themselves creatures of 'the common Father, kind to all,' should demand, at least, authoritative information as to what is done in our schools of physiology, that they may judge how far it is consistent with law and morality, and whether it requires any legal regulation. We make these observations, trite and obvious as they may seem, because it appears to us too much the fashion in medical writings to treat the proceedings of the Society for

the Prevention of Cruelty to Animals, and the opponents of vivisection, as if they were a causeless insult on the profession, and a wanton attempt to impede the progress of research. For ourselves, on the contrary, we expect from the whole movement, and from the labours of the Commission, some enactment which shall be as successful in preventing any public scandal as the Anatomy Act was in the somewhat analogous case of dissection; and which, like that Act, will rather assist than impede the attainment of the objects of the practice which it regulates. At any rate, Dr. McDonnell's book may be useful to those who pursue the controversy, by showing them exactly the nature of the experiments which are used by those who lecture on experimental physiology, and the amount of suffering which they involve to the animals who are the subjects of them.

There are four lectures. The first treats of the influence of the nervous system over the heart and blood-vessels, and illustrates the existence and action of the vaso-motor nerve, by the following experiments: 1. Plunging the hand into ice-cold water, and showing that the opposite hand is cooled to a very great degree, while the heat of the mouth undergoes no change; 2. The division of the cervical sympathetic in a living rabbit, showing the immediate occurrence of vascularity of the conjunctiva, vascularity and heat of the ear, and constriction of the pupil on the side of the injury; 3. The results of the same experiment performed on another rabbit some days previously, showing the persistence of the same effects, and the increased secretion of the lachrymal gland [the results of galvanisation of the sympathetic are related, but not demonstrated]; 4. The effects of galvanisation of the pneumogastric on the motions of the heart are demonstrated on a rabbit just killed with prussic acid and kept under artificial respiration, and the operation clearly and carefully described. The second lecture treats of the reflex phenomena of disease, explained through the influence of the nerves over the blood-vessels. In this lecture some of the previous experiments are referred to, and Pflüger's and Bernard's experiments are recited, and cases related, but no new experiments are exhibited to the class. The third lecture treats of the functions of the spinal cord and medulla oblongata; and here not only are Brown-Séguard's experiments referred to, but some animals are exhibited in whom similar sections had been made, in order that the phenomena might be verified before the cords were dissected, and the precise extent of the lesion ascertained. The fourth lecture deals with three subjects. 1. The hyperæsthesia met with in the posterior limb of the same side after division of the lateral half of the spinal cord, Dr. McDonnell is disposed to refer, in part at least, to the inflammation of the nervous centre produced by the section. 2. The muscular sense, and the pains which accompany spasmodic muscular contraction, he explains, after Brown-Séguard, by a disturbance of the galvanic condition of the muscles, or rather of the nerves distributed to them, and in support of this he exhibits to the class some experiments, after Du Bois-Reymond, with 'rheoscopic' frogs' legs. 3. Finally, he speaks of the artificial production of epileptic convulsions, and exhibits two experiments to the class, one in which the lateral half of the spinal cord had been divided a month before in a guinea-pig, and where the right cornea had become opaque, and slight irritation of the skin of the cheek on the

same side produced a general epileptic convulsion; the second, in which rotatory convulsions were produced by irritation of the auditory nerve in a rabbit, near its origin, illustrating the vertigo produced by injection of cold water into the ear, and the convulsions which children suffer from irritation propagated from the ear. Both these experiments are, we believe, repeated from Brown-Séguard.

This is a summary of the experiments exhibited by Dr. McDonnell to his class; and it cannot be denied that some of them involved pain and other suffering to the animals experimented on, and that all of them had been performed before, so that they were undertaken not for the purpose of original research but for that of demonstration merely. And obviously, if it is once admitted that experiments on animals are justifiable for the purpose of original research, it will be found utterly impossible to forbid their repetition. That repetition may be either for the purpose of mere demonstration, or for that of testing the result obtained in the original experiment; and the two objects are so nearly allied that it would be impossible effectually to separate them. Thus in so simple an experiment as that of plunging one hand into ice-cold water, Dr. McDonnell has shown how entirely the phenomena were at first misinterpreted until more extended observation of the effects of repeated experiments had supplied the true interpretation. Much more is this the case with the results of experiments on deep-seated organs of complicated structure and relations. If the alleged results of such experiments were admitted without further investigation, every kind of error would creep into our physiological teaching, and the very object for which experiments are instituted would be frustrated. Nor is there any test so good as that which is furnished by public demonstration. Dr. McDonnell's volume is a proof of the importance of such experiments, and of their immediate bearing on the pathology and practice of medicine, whilst its lucid style and vigorous method render it intelligible to a reader of average capacity, even if ignorant of medical subjects.

T. HOLMES.

Beiträge zur Geschichte und Statistik der offenen und antiseptischen Wundbehandlung. Zwei Abhandlungen von DR. R. U. KROENLEIN, Assistarzt am Königl. Chirurg. Klinikum, und Privatdozent zu Berlin. Pp. 86. Berlin: Hirschwald, 1875.

Dr. Kroenlein, the author of a book on the open treatment of wounds (mentioned in the LONDON MEDICAL RECORD, 1874), gives in the first of the above-named papers the history of the treatment of wounds, which shows that the open treatment and Lister's antiseptic treatment are the modern methods deserving more than others the attention of the profession.

In the second paper he tries—what has not been attempted hitherto—to compare the practical results of both these methods, and confronts for that purpose the cases recently published by Professor Volkmann, of Halle, and Professor Thiersch, of Leipzig, which have been treated antiseptically, with those of a period of open treatment carried out some years ago by Professor Rose and by himself, in the hospital of Zürich.

Out of all cases he selects the amputations, compound fractures, amputations of the mamma, and the accidental diseases: pyæmia, septicæmia, and erysipelas. We make only a short extract from his

tables, and must refer to the original paper everybody who wants to go further into the details.

Amputations of	Antiseptic Method			Open Treatment		
	Total	Died	Per Cent.	Total	Died	Per Cent.
Thigh	18	10	55'5	28	10	35'7
Leg	13	2	15'3	11	2	18'1
Foot	18	5	27'7	15	3	20'0
Humerus	10	3	30'0	14	2	14'2
Fore-arm	10	1	10'0	10	0	0'0
Hand	1	—	0'0	7	0	0'0
Total	70	21	30'0	85	17	20'0

The age of the amputated patients and the time of healing may be seen from the following :—

Amputations of	Antiseptic Method		Open Treatment	
	Age of Patient. Years	Time of Healing. Days	Age of Patient. Years	Time of Healing. Days
Thigh	25	61	37	118
Leg	29	47	46	87
Humerus	28	28	32	57
Fore-arm	31	29	29	56

Compound Fractures	Antiseptic Method		Open Treatment	
	Total	Per Cent	Total	Per Cent.
Conservatively treated .	17	39'5	65	63'7
Resected	4	9'3	7	6'8
Amputated	22	51'1	30	29'4
Total	43		102	

Compound Fractures of	Antiseptic Method		Open Treatment	
	Total	Died	Total	Died
Thigh	5	4	17	6
Leg	21	3	45	14
Humerus	7	1	24	5
Fore-arm	10	0	16	1
	43	8=19%	102	26=25'5%

Amputations of the Mamma	Antiseptic Method		Open Treatment	
	Total	Died	Total	Died
	13	5	22	3

Pyæmia and septicæmia have not been entirely avoided, but have not been much diminished, by both methods, while erysipelas was less occurrent during antiseptic treatment, but frequently observed on openly treated cases.

The time of healing, as well as the results respecting the function of the limb, is decidedly in favour of the antiseptic method, because it raises the number of cases of healing by first intention; but it is more expensive than the open treatment.

The modification of Thiersch, who applies, wherever possible, salicylic acid instead of the car-

bolic acid, is recommended, and attention is drawn to the caustic and sometimes intoxicating power of carbolic acid.

The author does not conceal that his comparison of both methods is yet far from being of general value, and definitive, as only some single series of cases were disposed of, and as, perhaps, the most brilliant results of the antiseptic method are to be found in other provinces of operative surgery than in those referred to. But his material did not furnish him the desirable number of cases of this kind. May others follow him to contribute to this important chapter.

P. SCHLIEP, M.D.

On the Prevention and Treatment of Scarlatina and other Infectious Diseases by the Internal Administration of Disinfectants. By DAVID J. BRAKENRIDGE, M.D., F.R.C.P.E., Assistant-Physician to the Royal Infirmary, Edinburgh. Edinburgh: MacLachlan and Stewart. 1875.

In this short pamphlet Dr. Brakenridge attempts to answer in the affirmative the question, whether or not any disinfecting influence can be brought to bear upon disease from within the body; or, in other words, to answer the question, can we disinfect living tissue?

He concludes, from the experiments of Professor Polli, of Milan, and Dr. Sansom, that 'if we can so disinfect the tissues of a living animal, that when it is put to death they will resist putrefaction, there is no reason why we should not hope to be able, by suitable means, to arrest or prevent a zymotic disease.'

Acting on this belief, Dr. Brakenridge, who had been in the habit of leaving scarlatina to itself, resolved to try disinfectant treatment. Of the various substances used for this purpose he chose the sulpho-carbolate of sodium, which he administered to adults in doses of from twenty to thirty grains every two hours. In this manner sixty cases were treated without a single death.

Of fifty cases treated in the Edinburgh Royal Infirmary Dr. Brakenridge says, 'Of these, not one failed to make a perfect recovery. Nineteen were males and thirty-one females. Their average age was 17'5 years. The average duration of the disease before treatment was commenced was 4'4 days. Dating from the outset of the disease, convalescence with normal temperature had commenced—in eighteen cases in six days; in eighteen cases in eight days; in five cases in ten days; in four cases in fourteen days; in two cases in seventeen days.

'In only three cases was recovery long delayed by sequelæ, and in these the sodium sulpho-carbolate treatment was commenced on the sixth, tenth, and fourteenth days of the fever respectively—too late to prevent the after-effects of the disease. In forty cases no complication interfered with the quick and quiet subsidence of the fever. Albuminuria was observed in five cases; in three of these it amounted merely to a passing trace; in the remaining two it was persistent, and accompanied with blood and renal casts. These two cases are included in the three above mentioned, in which the treatment was commenced late. Rheumatic pains, which were easily controlled, occurred in three cases. In three there was inflammatory swelling of the cervical glands, which in one strumous child resulted in abscess. In only two cases was any delirium noted: in one it was severe; in the other very mild. In forty-six cases the temperature and pulse fell steadily

after the treatment was put in force. In only four was any rise over the first recorded evening temperature noted; in all of these it was insignificant in amount, and of short duration. Only one case came under treatment on the first day of the disease; the eruption was coming out and was well marked. There was another case of scarlet fever in the same house. Treatment was at once commenced, and next day the eruption had disappeared, and the pulse and temperature was normal, and remained so. In another case, on the ninth day of the disease the medicine was suspended, the supply having run short. On the same evening, the temperature, which both on that morning and on the previous evening had been 100° , rose to 103° .

'The patients who are taken into the Royal Infirmary are for the most part adults. But that the disease does always run a mild course in such cases may be inferred from the fact, that of twenty-four patients admitted into the scarlet-fever wards of the infirmary during August, September, October, and November, 1874—the four months immediately preceding the commencement of the treatment by the sodium sulpho-carbolate—no fewer than six died.

'Up to this point, the results I have obtained by this method of treating scarlatina entirely support the favourable opinion which Dr. Sansom formed of it from his own experience. I have, however, ventured to go still further than, in so far as I am aware, any one who has used internal disinfectants has hitherto gone. So marked an influence did this remedy seem to exert on the actual disease, and so well was it tolerated in full doses, and for a considerable period, by all my patients, old and young, without exception, that I determined some time ago, whenever I met with the disease in my private practice, to give the sodium sulpho-carbolate to all individuals exposed to the infection who were not protected by a previous attack. For I argued, if by internal disinfectants we can destroy or inhibit fevergerms after they have multiplied indefinitely, and produced their pathological effects within the body, may we not reasonably hope that, by previously disinfecting the tissues of the body, the germs which first find their way into them will be much more easily destroyed or paralysed? I therefore hoped thus to be able either to modify or prevent attacks of infectious disease.

'To be able so to control the activity of the disease-germs on their entrance into the body, that the resulting attack should with certainty be rendered mild and safe, instead of severe and dangerous, and the patient thus be protected against a future attack, appeared to me the more desirable end to be aimed at. For to prevent the attack altogether, however desirable this might be at the time, would be to leave the individual still liable to the disease. The results which I have up till now actually obtained have exceeded my utmost anticipations, and require, I am fully aware, to be recorded and received with due caution.'

Dr. Brakenridge administered sulpho-carbolate for the above purpose in doses of from five to thirty grains, three times daily, to persons exposed to the poisons of scarlatina, diphtheria, and measles. It was given in this way with complete success to forty-five persons.

[The success here recorded is very marked, but it should be remembered that the patients were

mostly adults, in whom the disease, with exceptions, it is true, is usually of a mild kind. The mortality at twenty years of age would in ordinary times, probably, not exceed 2 per cent.; and it is quite conceivable that Dr. Brakenridge had to deal with an exceptionally mild epidemic. We should like to see the remedy tried on a large scale in a severe epidemic amongst children under five years of age, where the mortality ranges from 60 to 70 per cent. It is to be noted, also, that according to our author's own showing the disease was in no case arrested or shortened.—*Rep.*] ALEX. COLLIE, M.D.

The Anatomy of the Lymphatic System. Part II.

The Lung. By E. Klein, M.D., Assistant-Professor at the Laboratory of the Brown Institution, London. Illustrated by 6 double plates of 27 Figures. 8vo. pp. 80. London: Smith, Elder & Co.

Dr. Klein's able researches into the lymphatic system of the serous membranes, undertaken for the Medical Department of the Privy Council, have been followed up by investigations into the lymphatic system of the lung, the result of which now lies before us in the shape of a volume similar to the preceding one, and, like it, illustrated by numerous well-executed plates, the expenses of which have, as in the case of Part I., been defrayed by the Government Grant Committee of the Royal Society. It had been originally intended to discover the relation of the lung lymphatics to the process of tuberculosis; but, it being ascertained how imperfect was our knowledge of the normal anatomy of the organ, specimens of healthy lungs have been first subjected to minute examination.

The subject has been treated of under two sections; the first of which deals with the normal, and the second with the pathological conditions of the lungs. Of the first section the first three chapters are devoted to the so-called endothelium, the matrix, and the lymphatics of the pulmonary pleura, the last two to the lymphatics of the bronchi and lung tissue proper. Of the second section, the first chapter is concerned with the changes of the pulmonary pleura in acute and chronic inflammation; the second with the relations of the lymphatics of the lung to the process of artificial tuberculosis in guinea-pigs; and the last to the relation of the latter disease to acute miliary tuberculosis in man.

Like the costal pleura and other serous membranes, the pulmonary pleura is covered with a single layer of epithelial cells. Now the condition of these cells is different according as the lung is expanded in inspiration or collapsed in expiration, for, since the area of the pulmonary pleura is increased in the former act, the cells investing it will become flattened out like other epithelial cells, and are pale and transparent, while from the comparative collapse brought about by the latter act the cells appear polyhedral, or even columnar, and become in substance distinctly granular. The lung of the guinea-pig shows this best, as it contracts much more than that of other animals, which may be accounted for by its possession of a special muscular coat. It seems that the differences between the epithelium of the pulmonary pleura of the collapsed lungs and that of the costal pleura is precisely similar to that between the upper surface of the ovary and the surrounding peritoneum, as described by Waldeyer.

The matrix of the pulmonary pleura is similar in

structure to other serous membranes, consisting of a connective tissue containing elastic fibres and cellular elements, but it is more delicate and thin. It is best examined in the lungs of new-born children and of guinea-pigs. In a horizontal section of such a specimen, hardened in spirit and stained with haematoxylin, a far better reagent than carmine, bundles of connective tissue fibres will be seen, and in each of the interfascicular spaces lies a flattened nucleated cell. These spaces, which have a free intercommunication, correspond to the 'Saftkanal system' of other serous membranes (see Part I.) Just as there is a difference between the epithelium of the free surface of the lung in distension and in collapse, so does the arrangement of the fibres in the pleural muscular coat differ in expiration and inspiration, being widely separated during the latter, and closely approximated during the former act. The muscular fasciculi are further best developed in those parts of the lungs which participate most in the respiratory movement, e.g. on the mediastinal and on the anterior surface, being scanty on the posterior aspect. The muscular coat finally stands in a direct relation to lymphatic absorption from the pleural cavity; for, since the lymphatics of the lungs are in intimate relation with the meshes between the muscular coat, and as during inspiration the meshes are increased in area, a kind of pumping action will be established, and the meshes will fill themselves from the pleural cavity. As, however, in expiration the meshes become compressed, their contents will be squeezed into the lymphatics of the surface of the lung, which communicate with them. This action, which is similar to that of the lymphatic absorption through the diaphragm from the peritoneal cavity (*vide* Part I.), though not of marked effect under normal conditions, becomes under pathological conditions of great importance.

The lymphatic vessels of the pulmonary pleura are best developed and easiest studied in the lungs of dogs and of young children, and may even be followed under a lens in a fresh specimen. They may be easily filled with a solution of Brücke's Berlin blue by piercing one of the large trunks with the cannula, bent at a right angle near the tip, of a Pravaz's syringe, the lungs having been previously moderately distended by the forcing of air into one of the bronchi. To perform a similar operation upon the lungs of guinea-pigs is a very difficult task. Little need be said about the structure of these lymphatics, their wall being composed, as in other lymphatics, of a single layer of epithelial plates. Some end in blind saccular dilatations. The lymphatics have their origin in the subpleural alveoli (Sikorsky), and their trunks anastomosing enter the pleura, and, finding their way through the ligaments uniting the different lobes, finally reach the bronchial glands at the root of the lungs. There are also branches which arise in the deeper parts of the lung, and join the network of the subpleural lymphatics. These deep lymphatics are narrower in calibre, have no valves, and are lined by a different kind of epithelium. In the pleura of the lung of the guinea-pig there are also lymphatic lacunæ, which are in fact the spaces between the fasciculi of the subpleural muscular coat. Do stomata exist on the surface of the pulmonary pleura? Various observers, including Dr. Klein, have established the existence of stomata in the central tendon of the diaphragm, in the omentum and peritoneum, and in the *septum cisternæ lymphaticæ magnæ* of the frog, these being the orifices of the

perpendicular lymph-canals, lined by a special layer of epithelial cells; and Dybkowski has proved, both by experiment and by microscopic examination, the existence of stomata on the costal pleura. With regard to the pulmonary pleura, Dr. Klein believes that its lymphatic vessels are in free communication with the pleural cavity; in other words, that there are stomata amongst the endothelium on its free surface. He has figured (Plate I, Fig. 1) a surface view of the epithelium of the pulmonary pleura of a rabbit in a condition of pleuritis, brought about by the injection of putrid pus into its pleural cavity. Here are seen groups of germinating epithelial cells, and in the middle of each is an opening—a stoma—rendered very distinct by a plug of fibrinous material stained by nitrate of silver. The same means of communication between the pleural cavity and the intermuscular lymphatic spaces have also been seen by Dr. Klein in the lung of a healthy guinea-pig. With regard to the process of absorption by these channels, it is plain that the respiratory movement of the lung plays the most important part. On the expansion of the lung, in inspiration, the stomata on the surface will gape, and the intermuscular lymph-spaces (in the case of a guinea-pig) will be distended. Thus the lymphatic system will become filled with whatever material, able to pass through the stomata, happens to be in the pleural cavity. During expiration, the stomata, lymphatic spaces, and lymph-vessels proper being compressed, their contents will be forced into the efferent trunks. In the guinea-pig, the subpleural muscular stratum aids considerably the respiratory motion of the lung.

With regard to the lymphatic system of the bronchi, Sikorsky discovered in dogs and cats certain inter-epithelial structures on the bronchial mucous membrane, which readily take up the carmine from a watery solution of carminate of ammonia introduced into the air-passages—the epithelial cells remaining unstained—and communicate with fine canals, which perpendicularly penetrate the mucous membrane, and form by anastomosis an intricate network, chiefly in the submucous membrane, from which the lymphatic trunks take origin, and accompany the bronchi toward the root of the lung. The lymphatics, according to their position, may conveniently be classified as *peribronchial* or as *perivascular* lymphatics, according as they are situated in the adventitia or accompany the branches of the pulmonary artery.

Dr. Burdon Sanderson and the writer of this monograph have found on the walls of the bronchi in rabbits as well as guinea-pigs certain lymphatic ('perilymphangeal') follicles which are analogous in every respect to the lymph-follicles found in the tonsils, in the intestine, and in the cortical part of true lymphatic glands. The rootlets of the lymph-vessels belonging to the bronchial adventitia are, like the interfascicular lymph-spaces of other connective tissues, merely spaces between the bundles which constitute the matrix. In these spaces, further, are found the connective-tissue corpuscles which, as is generally admitted, are but the linings of the bundles which border the spaces. As then the lymph-canal system is in direct communication with the lymphatics of the bronchial adventitia, it follows of necessity also that the connective-tissue corpuscles are continuous with the epithelium of the lymphatic vessels. It is further a question whether the corpuscles in question are branched like the cells of the cornea, or whether, like so-called endothelial cells

they are unbranched cell-plates arranged in a continuous row, and connected by an intercellular substance appearing as lines between the cells. In the serous membranes, as stated in the first part of Dr. Klein's monograph, both forms exist; and the same appears to be the case in the bronchi, for in the loose tissue of the adventitia the interfascicular spaces are lined by connective-tissue corpuscles identical with epithelial cells, while in the denser structure of the mucous membrane these bodies have rather the shape of branched cells. At any rate, whether they be branched or not, it is clear that the corpuscles in question are continuous with the epithelium of the lymphatic vessels.

Apropos of the experiments of Sikorsky it was stated that carmine particles found their way between the epithelial cells of the bronchial mucous membrane into the lymphatic system of the bronchus. Amongst the ordinary epithelial cells of the bronchial mucous membrane, of the rabbit in particular, may be seen after careful manipulation by sections and teasing, certain nucleated cells apparently branched, which differ from epithelial cells proper in shape, in refractive power, in the character of their nucleus, and in their mode of staining on treatment with hæmatoxylin. As these interepithelial bodies are continuous with the subepithelial connective tissue, it might be suggested that they are, after all, epithelial cells in conjunction with connective-tissue corpuscles similar to those described by Huxley, Heidenhain, Billroth, and others. Such view, however, does not commend itself to Dr. Klein, who, on account of the striking morphological difference between epithelial cells proper and the bodies in question, holds that the conjunction of the latter with connective tissue corpuscles proves them to be interepithelial connective tissue cells. Next comes the question, what is their physiological value? These bodies obviously correspond to the pseudo-stomatous tissue of the serous membranes; in other words, to a tissue bringing the free surface into communication with the connective tissue cells of the mucous membrane. The spaces in which the pseudo-stomatous cells lie are, in fact, the canals of communication between the free surface and the interfascicular lymph-spaces, in which lie the connective tissue cells of the mucous membrane. Thus we see how, in the experiments of Sikorsky, pigment may penetrate between the epithelial cells into the lymph-spaces of the bronchial mucous membrane. It is an interesting fact that Mr. Watney has found analogous structural conditions in the mucous membrane of the alimentary canal, which are, it is believed, of importance for the due understanding of the normal process of absorption in the digestive tract.

The last chapter of those concerned with the normal anatomy of the pulmonary lymphatic system is devoted to the perivascular lymphatics of the proper lung-tissue. According to the discoveries of Sikorsky, there is in the walls of the alveoli a system of canaliculi and lacunæ which are, as it were, the rootlets from which the lymphatic trunks, accompanying the larger blood vessels, originate. These lymphatic trunks enter the root of the lung together with the veins. In the connective tissue surrounding the smaller (microscopically large) branches of the pulmonary artery, lymphatics may be seen under the guise of regular tubes or of irregular lacunæ. In the large arteries there are more of the former and fewer of the latter, while in the small arteries the reverse is the case. With regard to the muscu-

lar coat of the pulmonary artery branches of the guinea-pig, Dr. Klein has discovered, what has hitherto been overlooked, that it is not continuous, but is interrupted here and there by connective tissue. By the side of the arterial branches are lymphatic vessels which have no valves, and whose wall consists of sinuous endothelium. That which has been stated regarding the rootlets of the perivascular lymphatics, holds good also for those branches of the subpleural lymphatics which originate in the walls of the superficial alveoli. The relation between the interalveolar lymph-canalicular system and the alveolar cavities seems to be an indirect one, through what may be termed pseudo-stomatous canals, and not a direct one, as Sikovsky maintained.

To sum up, the radicles of the lymphatic system of the lungs have a threefold distribution, as follows.

1. Over the walls of the alveoli. This system is represented by irregular lacunæ and anastomosing canals, giving origin to lymphatic vessels having a special epithelial wall. These, as regards their position, according as it is superficial or deep, may be classed as *subpleural* or *perivascular* lymphatics.

2. Over the walls of the bronchi. This system consists, in the mucous membrane, of irregular lacunæ and anastomosing canals, in the more external parts, *i.e.* in the adventitia, of smaller or larger spaces. From these originate vessels having a special epithelial wall, and forming in the adventitia of the bronchi a net-work—the *peribronchial* lymphatics.

3. Over the pulmonary pleura. This is a system of interfascicular lacunæ communicating by a few canals. In the lung of the guinea-pig there are in addition certain *intermuscular lymph-spaces*. Both discharge into the subpleural lymphatics.

The subpleural lymphatics communicate directly with the pleural cavity by means of *stomata*. By means of *pseudo-stomata*, the radicles of both the perivascular and peribronchial lymphatics communicate indirectly with the alveolar cavities on the surface of the bronchial mucous membrane respectively.

The pathological condition of the pulmonary lymphatic system will be considered in the second part of the review.

J. C. GALTON.

Recherches expérimentales sur les Effets de l'Augmentation de la Pression atmosphérique. By J. C. T.

PRAVAZ, Docteur-ès-sciences, Directeur de l'Institut Orthopédique de Lyon.

Numerous papers have been published from time to time upon this subject, nearly all of which are confined either to an account of the results obtained from the therapeutic use of baths of compressed air, or to a description of the peculiar symptoms which frequently occur in miners from the sudden changes of atmospheric pressure they are obliged to undergo. The physiological effects which follow submersion in compressed air have received comparatively little attention; and the works of MM. Hervier and Saint-Lager, Vivenot, and Paul Bert are the only ones which are not wholly devoted to the practical branches of medicine or industry.

M. Pravaz, being placed under circumstances peculiarly favourable to the prosecution of such a study, attempts to elucidate the purely physiological results of compressed air-baths, as far as they influence the mechanism of circulation and respiration, and more especially the excretion of urea and carbonic acid, and calorification, which he considers

give a just estimate of the activity of the nutritive process.

The author made use of the apparatus which

M. C. Pravaz employed for therapeutic purposes, which consists of a large iron recipient into which the air can be pumped by a steam-engine. All the



No. I.—At Normal Pressure.



No. II.—At 19 Centimètres Pressure.



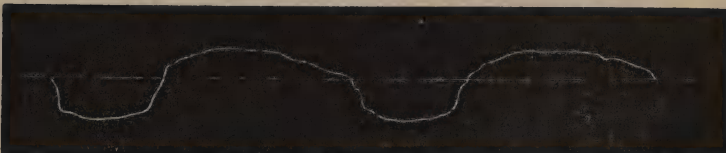
No. III.—At 38 Centimètres Pressure.



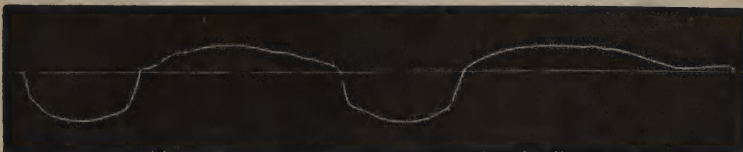
No. IV.—At 76 Centimètres Pressure.



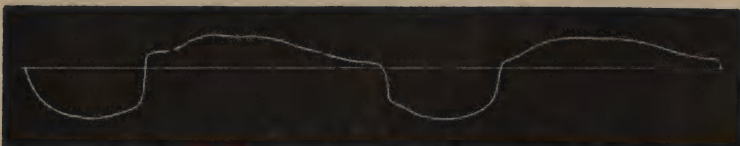
No. V.—Some time after the Bath.



No. VI.—At Normal Pressure.



No. VII.—At a Pressure of 19 Centimètres of Mercury.



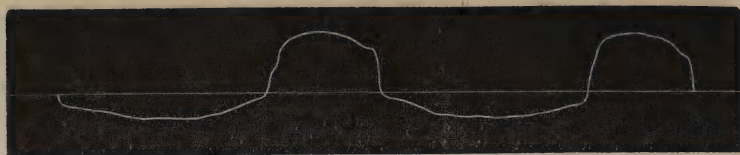
No. VIII.—At a Pressure of 38 Centimètres of Mercury.

experiments were carried out on himself, and the most vigorous precautions were taken to place him under identically the same conditions for each experiment.

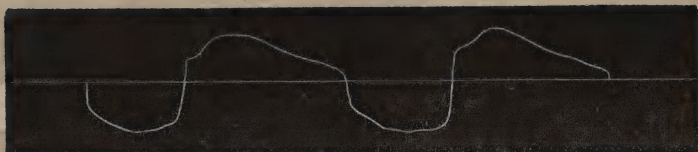
The baths lasted three to four hours, and the pressure used varied from 16 to 76 centimètres of mercury. With regard to the circulation, the author

confirms the result obtained by Vivenot, namely, that the arterial tension is increased in direct proportion as the pressure is increased. This may be

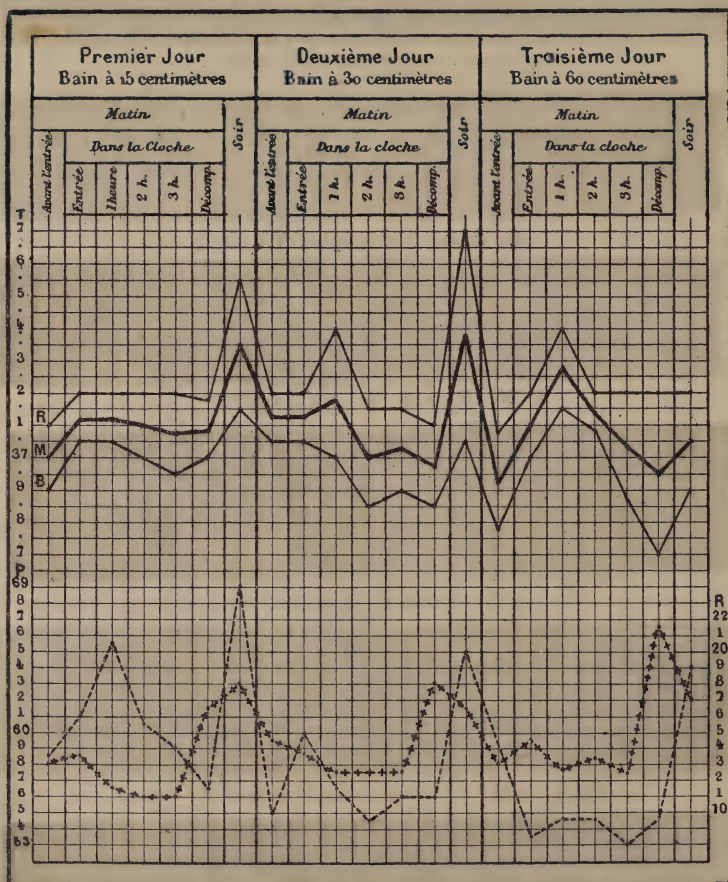
well seen from [the accompanying sphygmographic tracings, for which we are indebted to the kindness of Dr. Pravaz.



No. IX.—At a Pressure of 76 Centimètres of Mercury.



No. X.—After Removal of the Pressure.



The upper line marks the rectal, lower the buccal, and the middle dark line indicates the mean temperature.

— — — = pulse, + + + = respiration.

Here it may be seen that the line of ascension diminishes in height and becomes slightly oblique, while in all the tracings taken in the compressed air the summit is flattened, and the dicrotism, which is

evident in the first two tracings, becomes less obvious as the pressure is increased. After a slight acceleration of the heart-beat which follows the entrance into the bath, the pulse gradually becomes

slow and weak, which condition continues for some time after the removal of the pressure, as may be seen in the last tracing.

With regard to the respiration, he concludes that the depth of the movements increases, and their rapidity diminishes up to a certain point, which varies according to the strength of the individual; having reached this limit, the amplitude of the respiratory movements diminishes and they become more rapid. Immediately after the pressure is removed the respiration becomes deeper and shorter. These various points may be seen at a glance in the traces taken with the anapnograph of MM. Bergeon and Kastus.

The last chapter, which is devoted to the nutritive phenomena, forms the most novel and important part of the investigation. The results in the main confirm those already obtained by Paul Bert on the lower animals, and only then at enormously high pressures. The amount of urea increased immediately after entering the bath, and became relatively less during the succeeding hours, remaining higher than normal. After leaving the bath the amount suddenly diminished. The increase was much more marked at the medium than very high pressures. The amount of carbonic acid evolved per volume of expired air also increased with the medium pressures; when the bath was prolonged the increase was less marked, and when a certain height was reached, the amount decreased in direct proportion to the pressure employed. With the temperature, too, there was a temporary period of elevation after the bath was entered; then followed a diminution, which gradually increased with the pressure and continued for some time after quitting the bath.

In comparing the relations which these modifications bear one to the other, it is seen at once that the activity of the molecular changes at first increases absolutely and then diminishes relatively, and subsequently decreases absolutely in proportion to the height of the pressure and the length of time one remains in the bath. The temporary augmentation is easily explained by the condition of 'hyper-oxhæmia' in which the individual finds himself in an atmosphere containing a greater amount per volume of oxygen than the medium he is in the habit of breathing. [Respiration?—*Rep.*] The diminution in the activity of the organic operations is more difficult to explain. The author believes that the vascular tension, being mechanically increased by the increased pressure, produces retardation of the heart-beat. He thus makes two factors, (1.) increased oxygen-supply per volume of air; and (2.) increased arterial tension, to combat one another in such a way that, for the first few minutes after entering the bath, the great amount of oxygen gets the upper hand and increases the nutritive activity; while under the influence of a more prolonged sojourn in the compressed air, the increased arterial tension retards the heart's action, and thus reduces the amount of nutritive interchange in the system.

The changes which take place upon leaving the compressed air seems to be more striking than any others, and it seems a pity the author does not pay them more attention. The investigation is of a purely scientific nature, but may aid in the more exact application of compressed air-baths, which in some places have become fashionable. It also shows how far from advantageous such a mode of treatment may prove in some cases.

Clinical and Physiological Researches on the Nervous System. No. I. On the Localisation of Movements in the Brain. By J. HUGHLINGS JACKSON, M.D., F.R.C.P., Physician to the London Hospital, etc. London: Churchill, 1875.

This reprint, from the *Lancet* of 1873, consists of only twenty-five pages, but it is preceded by a preface twice as long, and followed by a reprint of three cases of convulsions reported by Dr. Gowers. Dr. Hughlings Jackson promises similar reproductions of papers which have appeared in various periodicals on the following subjects: Tumours of the Brain and Optic Neuritis, Syphilitic Affections of the Nervous System, Affections of the Sight in Diseases of the Nervous System, and the Physiology and Pathology of Language.

All who are familiar with Dr. Hughlings Jackson's writings will be glad to have his admirable observations in a collected form; and, when so much that is valuable is offered us, it may seem ungracious to criticise the form in which it is presented. But it would perhaps be better if the succeeding essays were less literally reprinted. Some writings, like Watson's *Lectures* or Virchow's *Cellular Pathology*, might well be treated as the text on which to hang comments and corrections, introductions and appendices, just as the older physicians dealt with Hippocrates and Galen, or Coleridge with Archbishop Leighton. But while an author can keep the recension in his own hands, the better course would seem to be that which is usually followed, to combine his observations into a continuous exposition, adding such references as may seem necessary to secure his rights of priority. Again, with respect to his question of priority, we think our author is too scrupulous in assigning to each observer his share in contributing to general conclusions which have been too gradually reached to belong to any one in particular. In science, he discovers who proves, and a happy guess is of totally different value from a demonstration. Lamarck's theory of evolution was justly put aside by his contemporaries, though now it turns out to have been right in its main drift; and if some of Gall and Spurzheim's localisations should prove not absolutely wrong, it could not make 'Phrenology' less of an imposture than it was. After Marshall Hall's 'epoch-making' discovery of reflex action in the cord, it was inevitable that the principle should be extended, at least hypothetically, to the brain. What was, and still is wanted, is to ascertain by observation and experiment how far and under what conditions it takes place. So, with regard to convulsions, that, like all so-called 'morbid' functions, they are part of physiology, and may be studied as experiments made for us by disease, is a truism; the merit is with those who have so studied them.

The same scrupulosity is sometimes shown by Dr. Jackson in apologising for some of his most reasonable remarks as, 'at first glance, extravagant or grotesque.' He is perfectly free from the foolish ambition of shocking stupid people, and need not suppose that his readers will receive anything he writes with less than respectful attention. Moreover, if, as we hope, this important paper will reappear, with the others promised to succeed it, in an uniform and compact form, we venture to draw the writer's attention to one or two blemishes which are excusable in periodical literature, but are scarcely suited to what will, we feel sure, be a volume of classical

value. We refer to such phrases as 'a clotted mass of movements,' 'the mildest criticism,' 'development in a coarse brutal way of the functions of some parts of the brain,' 'the movements of the heart and respiration are less frequent, and the temperature is abased (soon after the seizure of course is meant).'

But when a critic is reduced to find fault with style, it is often the best proof of the excellence of the substance; and, lest our preface should be as long as Dr. Jackson's, we turn to the subject-matter of the essay.

The introduction is occupied by an interesting discussion on the relation between the sensori-motor 'substrata of mentation' and physical changes on the one hand, and states of consciousness on the other. It is one of the author's merits to have insisted on the presence of the motor element in this substratum. Memory of words has more to do with the tongue than with the ear, and giddiness is objectively a motor, not a sensory symptom; 'the sensation which attends it is a state of consciousness accompanying the outgoing current.' The double use of the word 'sensation' is partly to blame for the confusion between consciousness of afferent impressions and consciousness of phenomena generally. If we kept *sensation* to its objective meaning, excitement of an afferent nerve and ganglion-cell, and used *perception* to include the consciousness of sensations or of movements, this difficulty would be avoided. There follows a valuable explanation of the principle of compensation, by which each part of the grey matter of the cerebrum 'contains processes [organs] for movements of the whole of the body, so that destruction of much of the brain may lead to no symptoms, while yet the derangement of the same part may produce symptoms by its discharge.' With respect to localisation in the hemispheres, we note the following remarks.

'In most people the left side of the brain is the leading (motor) side, the side of the so-called will, and the right is the automatic (motor) side.'

'Movements of the two sides of the body are represented in each side of the brain;' but, while accepting Dr. Broadbent's hypothesis that the bilaterally acting muscles of the two sides are represented in each hemisphere, Dr. Jackson would add that all movements are represented to some extent in both, but the most volitional and specialised least; and, on the other hand, that the most automatic and bilaterally acting (e.g. intercostals) are not quite as fully represented in their own as in the opposite side of the brain.

'Destruction of no part of the cerebral hemisphere produces loss of sight. Discharge of parts (I think posterior parts chiefly) produces coloured vision. Tumour in it leads to changes in the optic nerve (optic neuritis), in consequence of which defect or loss of sight may or may not follow. Disease of the posterior lobe (right) produces defect of perception.' 'Facts seem to show that the fore-part of the brain serves in the motor aspect of the mind, and we may fairly speculate that the posterior part serves in the sensory.' 'I believe that all the muscles of the body are represented in the cerebellum, as all are in the cerebrum, but in different order.'

The important principle that 'the order of loss of movements, faculties, etc., is from the special and voluntary to the general and automatic,' is illustrated by the effect of destroying lesions (hemiplegia) and of discharging lesions (convulsions). This principle had not escaped the notice of Sir Charles Bell, from

whom an interesting quotation is made on the progressive paralysis of drunkenness. It receives interesting confirmation by the careful report by Dr. Gowers of three cases which form the appendix.

We can only hope that the present publication is but the forerunner of a more complete volume, which shall deal with the many points in cerebral physiology on which the author has thrown light.

A Guide to the Microscopical Examination of Drinking Water. By J. D. MACDONALD, M.D., F.R.S.A., Assistant Professor of Naval Hygiene, Army Medical School. J. and A. Churchill. 1875.

Dr. Macdonald's *Guide to the Microscopical Examination of Drinking Water* has been designed, he informs us in his preface, 'for the use of Officers of Health and Naval and Military Officers, who have to determine the nature of the suspended matter in water used for drinking.' It cannot be doubted that medical officers of health, and officers connected with public services and in charge of bodies of men, should be in every way competent to determine the sanitary import of suspended matters contained in potable waters. To medical officers of health we look to see that a wholesome and pure supply is provided; that is, so far as may be possible, for there is scarcely a river or stream that furnishes drinking water free from impurities; and, what is even more alarming, the means at command for separating even mineral and coarser particles which may affect health, are imperfect and not at all to be relied upon. It is fortunate, therefore, that from a large proportion of the living creatures, animal and vegetable, found in drinking water, we are unable to trace any special injury to health; their presence, however, is a matter of importance, as showing organic impurities, that serve as pabulum, and as indicating a source of putrescence, which further and closer observation may prove of deep sanitary significance. Whatever is effected in the elucidation of obscure points in the life-history of the lower forms of life, which there is reason for believing to be hurtful to health, will be brought about by an intelligent use of the microscope. The author of the work before us has made an attempt to assist in this useful work; and we propose to inquire what success has attended his attempt.

On turning over the pages of Dr. Macdonald's book, it will at once strike the reader that he relies more upon the skill of his pencil than the descriptive powers of his pen; he furnishes a number of figures of organism, with only a short commentary on their natural history, while the rest of the book deals with their classification, thereby assisting in their identification rather than that of linking together particular forms with special effects. One half the volume is occupied with lithographed plates, which, although possessing merit as specimens of pen-and-ink drawing, lack the truthfulness and finish of steel-plate engravings; the beauty and delicacy of structure in a large number of forms is therefore lost. Two only out of the twenty-four plates are devoted to the examination of specimens of drinking water, and in one we notice the author has fallen into the common error of assigning the exquisitely formed desmids and pretty pinnularia to 'stagnant and impure water.' On the contrary, they are inhabitants of the clearest and purest running streams; and although their ova may be carried by floods and heavy rains into stagnant pools and bog-water, they soon perish or drag on a miserable existence. Most unicellular

plants prefer good water; the confervaceæ and confervoid diatoms, however, do often flourish in impure and brackish waters, and to which some of the species communicate a most unpleasant odour; if taken into the stomach, they likewise give rise to diarrhoea or derangement of health.

From their imperfect representation, we with difficulty recognise the curious filamentous threads, oscillatoriæ, whose wriggling movements over the field of the microscope cause them to be mistaken for animals. Spirilla, the longer, and micrococci the shorter and broken up segments of oscillatoriæ, are objects of interest to officers of health, since they may be always found in sewage-communications and in bilge-water, and are decidedly prejudicial to health. No attempt has been made, however, to show the sanitary import of the innumerable organic matters, vegetable and animal, or to separate the noxious from the more innoxious contaminations; and we must express dissent from Dr. Macdonald's statement that 'decaying animal matter, as well as vegetable matter, may consist of materials *proper to fresh water or foreign to it.*' Every kind of decaying matter found in fresh water must be looked upon as foreign to it, and may be extremely prejudicial to health, when least expected. Too much space throughout has been devoted to matters of no importance in the microscopical examination of drinking water, as the classification of organic forms, etc., and too little to substances about which in a hygienic point of view officers of health would like to know more. We confess to some disappointment on finding the barest reference to improved methods of research, and the employment of immersion-lenses, as the bacteria and other smaller bodies, as well as the delicate flagellæ, can only be studied with the very highest powers of the modern microscope. We miss also the interesting observations, instituted by Mr. Heisch, for determining in a ready way, and by the aid of the microscope, the presence of sewage in drinking water. His method, which may prove useful to officers of health, simply consisted in adding a small portion of pure cane-sugar to the suspected sample of water, which is then maintained at a temperature of 60° or 70° Fahr., and in a place freely exposed to light. In a very short time the mixture becomes turbid, and crowded with fungus mycelium; subsequently butyric acid is formed, and finally bacteria appear. Observations of this kind, when repeated and confirmed, will prove of use in detecting sewage-pollution, and may lead to important practical results in determining the precise conditions under which germs are developed and become a source of danger. We look in vain also for anything like a classified arrangement of waters derived from various sources, or according to their relative value as potable waters, commencing, *e.g.*, with the chemical, and passing to the microscopical characteristics of a good drinking water, to that of rain-water, upland surface, or bog-water, surface-water from cultivated lands; polluted rain-water, shallow well-water or ground-water, ordinary spring-water, and artesian well-water. A carefully arranged series of observations properly classified would be exceedingly useful, and enable officers of health and others to compare notes and found reports upon the unwholesome character of the water of the district. Dr. Macdonald's book might have been made a fitting atlas and supplement to the recent 'Report of the Commissioners appointed to inquire into the Pollution of Rivers and Streams,'

upon which sources the country is obliged to depend for its supply of drinking water. We regret that we are unable to award our unqualified meed of praise to the labours of one known to be skilled in the use of the microscope, and a competent observer as well as a teacher of hygiene.

NEW INVENTION.

IMPROVEMENTS IN TRUSSES.

We have received the following communication from Messrs. Arnold and Sons, the well-known instrument manufacturers of West Smithfield:—

(To the Editor of the MEDICAL RECORD.)

SIR,—In your journal of last month's date, under the heading of 'New Inventions,' appears an improved truss with ball-and-socket joint, which allows the pad to be placed in any position. We beg to say that neither principle nor general construction of the truss referred to is new. The ball-and-socket principle, with screw adjustment to fix the pad at any angle, was patented on August 28, 1874, no. 2,947, and we purchased the patent right of the said inventor. At the Leeds Exhibition this year one of the trusses referred to has been exhibited by us. We likewise enclose the patent specification for your inspection, in which you will find the ball-and-socket principle, which can be fixed at any angle, is claimed by the inventor.

We much regret having to trespass on your valuable space, but can scarcely allow the truss to be called a new invention, the same having been anticipated at least fifteen months ago.—We remain, Sir, your obedient servants,

ARNOLD & SONS.

35 and 36 West Smithfield.

RECENT FRENCH BOOKS.

Published by G. Masson.

Des névralgies envisagées au point de vue de la sensibilité récurrente (pathogénie et traitement); par le docteur Adolphe Cartaz. Prix: 3 fr.

Published by J. B. Baillière and Son.

De l'hygiène publique et de la chirurgie en Italie; par le docteur Gabriel Millot. Première partie: De l'hygiène publique en Italie. Paris, 1876. Prix: 4 fr. 50.

Published by V. A. Delahaye et Cie.

Traité clinique des maladies des Européens au Sénégal; par le docteur Berenger-Feraud, 2 vol. in-8. Prix: 14 fr.

Laçons de clinique obstétricale, professées à l'hôpital des Cliniques; par J. Depaul, professeur de clinique d'accouchements à la Faculté de médecine de Paris, etc., rédigées par le docteur de Soyre. 3e et dernier fascicule. Prix de l'ouvrage complet, 16 fr.

Étude sur les affections articulaires; par le docteur Quinquaud. Prix: 2 fr. 50.

Étude sur les lésions syphilitiques des membranes profondes de l'œil; par le docteur Drouin. Prix: 2 fr.

De certaines lésions de la région naso-pharyngienne que l'on doit rattacher à la syphilis; par le docteur Chaboux. Prix: 1 fr. 20.

Les lymphatiques utérins et leur rôle dans la pathologie utérine; par le docteur Just Lucas-Championnière. Prix: 1 fr. 50.

- Mécanisme des fractures du coude chez les enfants, leur traitement par l'extension ; par le docteur Berthomier. Prix : 2 fr.
- La phthisie pulmonaire et la médication arsénico-phosphorée, comparée avec les divers traitements connus. Étude basée sur de nombreuses observations et les données les plus récentes de la science ; par le docteur Lescolmel. Prix : 3 fr. 50.
- Nouvelle recherche sur la durée de la grossesse. Ses rapports avec la conception, ovulation et la menstruation ; par le docteur Gaston. Prix : 1 fr. 50.
- Essai sur la resection du genou (Cas de tumeurs blanches et de difformités) ; par le docteur A. Picard. Prix : 2 fr.
- De la rupture des anévrysmes de l'aorte dans la trachée et les bronches ; par le docteur Ordonneau. Prix : 2 fr. 50.
- De la xérophthalmie ; par le docteur Tixier. In-8. Prix : 1 fr. 50.
- De l'épilepsie syphilitique tertiaire ; par le docteur Alfred Fournier. Prix : 1 fr. 25.
- De l'influence des maladies du cœur sur la menstruation, la grossesse et son produit. De l'accouchement et de l'avortement provoqués ; par le docteur Duroziez. Prix : 1 fr. 50.

MISCELLANY.

MORTALITY OF HOSPITALS.—Mr. James Heywood, F.R.S., President of the Statistical Society, has given the sum of 20*l.* to be presented with the 'Howard Medal' in November next. The essays, as already announced, are to be sent in on or before June 30, 1876. The full title of the essay is, 'On the Mortality of Hospitals (General and Special) in the United Kingdom in times past and present.'

PHARMACEUTICAL CHEMISTS.—On Wednesday, December 15, at the Major Examination of the Pharmaceutical Society, Miss Isabella G. Clarke, having passed the examination satisfactorily, was admitted a pharmaceutical chemist. There are several ladies on the register as 'chemists and druggists,' but this is the first instance in Great Britain in which a lady has passed the Major Examination as a pharmaceutical chemist.

ADMISSION OF WOMEN TO MEDICAL DEGREES.—We have the best authority for stating that the Council of the Royal College of Surgeons of England have arrived at the very important decision to admit women to examination for the diploma of Licentiate in Midwifery of the College. This diploma entitles its holder, by Act of Parliament, to a place on the Medical Register and a legal status in the obstetric department of the medical profession. Thus a pacific solution has been arrived at, of a question which threatened to involve a long-continued controversy. Three ladies have, we understand, already applied for examination.

NIGHT MEDICAL SERVICE IN PARIS.—The night medical service long talked of for the city of Paris is now organised and in operation since January 1, in its eighty *quartiers*. A very large number of medical practitioners in each *quartier* have announced themselves as being ready to give the benefit of their nocturnal services to patients who may require them. The names and addresses are posted at the police stations. From October 1 to March 31, the night medical service will commence at 10 P.M. and terminate at 7 A.M. From April 1 to September 30, this service will not commence until 11 P.M. and will terminate at 6 A.M.

INSECTIVOROUS PLANTS.—At the ordinary monthly meeting of the Royal Microscopical Society on December 1, Professor Bennett directed attention to some peculiar bodies he found in *Drosera*, *Pinguicula*, and other insectivorous plants. These bodies are below the cuticle, and have a glandular aspect. They exhibit some cross markings, which give them a superficial resemblance to the external glands of *Coleus*, described and figured by Mr. Slack, but they are not, as those are, epidermic structures of the nature of glandular hairs. They have evidently a different function as well as a different position, and Mr. Bennett thinks it possible they are organs of digestion.

WHAT SAVAGES THINK OF TWINS.—In Africa, according to Dr. Robert Brown (*Races of Mankind*), the birth of twins is commonly regarded as an evil omen. No one, except the twins themselves and their nearest relatives, is allowed to enter the hut in which they first saw the light. The children are not allowed to play with other children, and even the utensils of the hut are not permitted to be used by anyone else. The mother is not allowed to talk to anyone not belonging to her own family. If the children both live to the end of the sixth year, it is supposed that Nature has accommodated herself to their existence, and they are thenceforth admitted to association with their fellows. Nor is this abomination of twin births restricted to Africa. In the Island of Bali, near Java, a woman who is so unfortunate as to bear twins is obliged, along with her husband, to live for a month at the sea-shore or among the tombs until she is purified. The Kahsias of Hindostan consider that to have twins assimilates the mother to the lower animals, and one of them is frequently put to death. An exactly similar belief prevails among some of the native tribes of Vancouver Island. Among the Ainos one of the twins is always killed; and in Arebo, in Guinea, both the twins and the mother are put to death.

CARNIVOROUS PLANTS.—'Pinguicula' writes to the *Times*:—'Within the past three or four years the subject of carnivorous plants has received a considerable amount of attention from men of science and others. It has been asserted that certain plants, such, for example, as the sundew (*Drosera rotundifolia*), capture, dissolve, digest, and absorb flies and insects which are placed upon or happen to touch specified portions of these plants. The insects and flies are, it is stated, devoured in this manner for the purpose of supplying the plants with food. The attention the subject has excited, and the surprise expressed by many persons, led several to suppose that the utilisation of insects as food by *Drosera* was a new discovery, and perhaps some readers of the *Times* may like to be disabused of the idea that it is so. I met the following passage in an edition of "Combe's Constitution of Man," printed in 1835, at page 88:—"Sec. 5. No. 6. Destructiveness is given, and man is constituted with a carnivorous stomach, and animals to be killed and eaten exist. . . . Not only has nature taught the spider to construct a web for the purpose of ensnaring flies, that it may devour them, and constituted beasts of prey with carnivorous teeth, but she has formed even plants, such as *Drosera*, to catch and kill flies and use them for food." The italics are my own. Combe probably copied from another writer, so in all probability the vagaries of carnivorous plants were known half a century ago, instead of the other day.'

A TALE OF AN OLD INJURY.—I close my report with the following rich case, that, from the fact of its being ordered to be spread on the minutes, has become the property of the profession at large. No set of men in the world can appreciate it better or enjoy it more, and I only need add, to quiet any misgivings as to its publicity, that no one laughs over it more heartily than the M.D. who figures therein. Dr. — is one of our oldest practitioners. M. G. is a worthy old farmer of the Celtic race. The latter came into the doctor's office with his arm hanging down and a look of pain on his face. The doctor was going out, but stopped with a 'What is the matter, M.?' 'Shure, sur, I fell on the barn flure and hurt me arm.' 'You did, eh; well, off with that coat and shirt.' Off came the articles, and after a moment's examination the doctor exclaimed, 'Why, man, your shoulder is out.' 'Well! doctor, and can ye fix it?' 'Oh, yes; lie down on that lounge.' Before he complied he said a few prayers, and took a drink of whisky. Without more ado he was put through all the manipulations known to ancient or modern surgery, with no good result. The patient became exhausted, cross, and discouraged. The doctor, perplexed, his shirt soaked with perspiration, sat glowering at Mike in despair, when a thought struck him, and he asked, 'Mike, when did you do this—get the shoulder out, I

mean?' 'Shure, sur, I think it was about twenty-two years ago, in Ireland.' The two men put on their coats in short order, and one now never attempts to reduce a dislocation without asking WHEN. The other thinks it all right, but a mighty uncomfortable way of arriving at a conclusion. The fall on the barn floor that morning caused the supposition that then the dislocation took place, and it is readily seen how easy it was to fall into the error.—Dr. S. S. Towler, in report of Butler County Medical Society (*Transactions of Medical Society of State of Pennsylvania*, vol. x.).

INTERMARRIAGE AS A CORRECTIVE OF HEREDITARY TENDENCIES.—A review of the reports of the Perkins and Massachusetts Institutions for the blind, published in the *Edinburgh Medical Journal* for October contains some remarks on a point of great importance. They, as well as the whole report, which is stated to be of extreme interest, are from the pen of Dr. Howe, the author of a well-known work upon the *Causes of Idiocy*, and the trainer of Laura Bridgman and Oliver Casswell, who were blind and deaf from infancy. Referring to the question of enforced celibacy in certain cases, Dr. Howe writes: 'I formerly believed and taught that those persons strongly marked by scrofula, by tendency to insanity, by organic defects, as blindness and mutism, should crucify themselves, and abstain from marriage. Reflection and experience, however, have changed that opinion. I have known heroic instances of such martyrdom. But martyrdom is not a natural remedy for evil; and if it were, not one in ten thousand will resort to it. We cannot disappoint and thwart our natural instincts with impunity, even that good may come from so doing. The natural compensations for endurance of evils, and the natural remedies for such evils, are many and marvellous. The fact to be considered here is the strong tendency to perpetuation of defects and infirmities in offspring; but the remedy is not, ordinarily, an attempt to starve instincts which cry continually for gratification; nor abstinence from those parental relations which are essential for the highest development of the best part of our nature; because a more merciful remedy is provided by our Maker, in that strong power of recuperation from any morbid condition, not necessarily mortal, which pervades all organised beings, and acts as steadily as gravitation itself. Not self-crucifixion, but suitable intermarriage, will, in a few generations, counteract the tendency to perpetuation among the offspring of inherited infirmities and inherited vices.'

CRANIOMETRY.—The *Bulletins de la Société d'Anthropologie de Paris* (fascicules 2, 3, 1875) contain a very interesting and important paper by M. Broca, being a résumé of the 'Cranimetrical Instructions' which he had been commissioned to draw up for the guidance of anthropologists by the Society. In accordance with the directions of the Commission, these instructions are preceded by a description of the anatomy of the head, in which an entirely new anatomical nomenclature has been adopted, for which M. Broca craved the approval of his confrères on the ground of the obscure terminology hitherto in use in craniology. Among a number of novel terms may be instanced such words as endocranium and exocranium; pteron and discus for the ascending and the horizontal parts of the greater ala; inion for the external protuberance of the occipital; and basion, opisthion, staphanion, pterion for distinctive portions of the occipital, frontal, and temporal fossæ. M. Broca announces that this new system of cranial terminology will be soon published *in extenso* in the *Mémoires* of the Society. The same publication also contains a description of a negro skull belonging to the Anthropological Museum, in order to show how the normal parietal foramina may present such unusually large dimensions as to assume after death the appearance of artificially produced parietal perforations. At a previous meeting of the Society, on March 18, M. Broca had exhibited a skull taken by M. de Palmas from an ancient cemetery in the

Canary Islands, which presented a double parietal opening. In connection with the subject of arrest of development in the osseous and other parts of the brain, as shown by M. Broca in the paper on parietal perforations, he drew attention to the extraordinary spread of religious mania in France, of which he gave numerous instances amongst the higher as well as lower classes, and appealed to medical and other scientific men to devote themselves to the elucidation of this important subject.

INTERNATIONAL MEDICAL CONGRESS.—The Medical Societies of Philadelphia have taken the initiatory steps for the formation of an International Medical Congress, by the appointment of delegates from their respective bodies, who were empowered to organise and perfect a scheme for celebrating the centenary of American independence. In accordance with the authority thus given, the delegation has organised the Centennial Medical Commission, with the following officers:—President, Samuel D. Gross, M.D., LL.D., D.C.L., Oxon. Vice-Presidents—W. S. W. Ruschenberger, M.D., U.S.N., Alfred Stille, M.D. Recording Secretary—William B. Atkinson, M.D. American Corresponding Secretaries—Daniel G. Brinton, M.D., William Goodell, M.D. Foreign Corresponding Secretaries—Richard J. Dunglison, M.D., R. M. Bertolet, M.D. Treasurer—Caspar Wisper, M.D. Arrangements have been made for the holding of the Congress in the city of Philadelphia, to begin on September 4, and to terminate on September 9, 1876. The Commission propose the following general plan for the organisation and business of the Congress:—I. The Congress shall consist of delegates, American and foreign, the former representing the American Medical Association and the State and Territorial Medical Societies of the Union; the latter the principal medical societies of other countries. II. The officers shall consist of a President, ten Vice-Presidents, four Secretaries, a Treasurer, and a Committee of Publication, to be elected by the Congress at its first session, on the report of a Committee of Nomination. III. The morning sessions of the Congress shall be devoted to general business and the reading of discourses; the afternoons to the meetings of the sections, of which there shall be nine, viz.:—1. Medicine, (including Pathology, Pathological Anatomy, and Therapeutics. 2. Biology, including Anatomy, Histology, Physiology, and Microscopy. 3. Surgery. 4. Dermatology and Syphilology. 5. Obstetrics and Diseases of Women and Children. 6. Chemistry, Toxicology, and Medical Jurisprudence. 7. Sanitary Science, including Hygiene and Medical Statistics. 8. Ophthalmology and Otolary. 9. Mental Diseases. IV. The language of the Congress shall be the English, but not to the exclusion of any other language in which members may be able to express themselves more fluently. Gentlemen intending to make communications upon scientific subjects will please notify the Commission at the earliest practicable date, in order that places may be assigned them on the programme. In order to impart to the Congress a thoroughly international character, invitations to send delegates will be extended to all the prominent medical societies in Europe, Mexico, the British Dominions, Central and South America, the Sandwich Islands, the East and West Indies, Australia, China, and Japan. Invitations will also be tendered to medical gentlemen of high scientific position; and distinguished visitors may be admitted to membership by a vote of the Congress. There is every reason to believe that there will be ample hotel accommodation for all strangers visiting Philadelphia in 1876. Further information may be obtained by addressing the Corresponding Secretaries, Richard J. Dunglison, 874 N. 16th Street, and R. M. Bertolet, 113 S. Broad Street, Philadelphia.

THE SKULL OF MOZART.—A Vienna paper states that Mozart's skull is in the possession of Professor Hyrtl, who has preserved it, upon a silver embroidered satin cushion, beneath a glass globe. He has kept it as he would keep a sacred relic, and until recently, in order to avoid crowds of curious visitors, he had never shown this—his rarest trea-

sure—to anyone. The last resting-place of Mozart has never yet been definitely determined, and it is doubtful if it ever can be determined. It sounds rather strange to say that Mozart's last resting-place is unknown and yet his skull is someone's possession. Professor Hyrtl, according to his own story, came into possession of this most highly interesting relic in the following way:—He inherited the skull from his brother, and the latter had obtained it from a gravedigger at St. Marx Cemetery. In the year 1830 Hyrtl's parents died in Vienna and were buried at St. Marx's Cemetery. Their son, a brother of the Professor, an engraver by trade, had always loved his parents very tenderly and was accustomed to visit their graves frequently, and usually at an hour when the cemetery was deserted. This circumstance was noticed by the gravedigger of the cemetery, and occasioned him considerable surprise. He ingratiated himself into the good graces of the pious young man, and they became warm friends. The friendship lasted many years, until finally the gravedigger one day became very sick, and his young friend Hyrtl, the engraver, came to see him. The gravedigger, feeling that the end of his life was fast approaching, related the following story to Hyrtl:—He was once present, when a boy—many, many years ago—at a mass sung at St. Stephan's Cathedral which was composed by a certain man, Mozart. The music affected him so much that tears came in his eyes and the name Mozart was inscribed indelibly in his memory. Again many years passed by, when one day a very modest funeral took place at St. Marx Cemetery. The name of the person buried was Wolfgang Mozart, and he was a composer of music. They placed the coffin in a common grave, covered it with earth—at which proceeding the gravedigger assisted; but few persons visited the grave in the next few years, and later no one at all visited it, or troubled themselves about the distinguished dead. But he, the gravedigger, upon whom the music in St. Stephan's Cathedral had made such a deep impression, after many years, when the bodies were exhumed, went to the grave and took from the coffin (in which lay the last remains of Mozart) the skull of that distinguished composer, and this skull he had preserved until that moment as a most sacred relic. This skull he wished to make a present of to his young friend Hyrtl, the engraver, that he also might preserve it and keep it sacred till his death. Between the two men no conversation took place in reference to the situation of the common grave, but Hyrtl, the anatomist, who inherited the skull from his brother, says that the form and shape of the skull correspond fully with the bust of Mozart's head. Hyrtl also possesses documents in reference to this point, and vouches for the authenticity of the skull. Professor Hyrtl thinks he will, at some future day, present this invaluable relic to the Mozarteum at Salzburg. In the meantime it is to him a treasure of inexpressible value.

THE EARLY DAYS OF THE ROYAL SOCIETY.—The following interesting account of the early searches after knowledge by the Royal Society is taken from an admirable article in the *Builder* of January 8, 1876, entitled—“Some old Houses and their Stories.” After describing the foundation of the Royal Society and its first local habitation, the writer proceeds: “But really it does appear funny to see these grave, sober, stately philosophers desperately puzzled by Prince Rupert's drops, sent to them for investigation by their royal patron, the King, having been purchased, as it seems, in Rosemary Lane, and appointing a special committee of investigation to visit the glass house at Woolwich, and there experimentalise with them. It certainly is amusing to see them with a little kitten in their midst breathlessly anxious as they pricked it with a poisoned East Indian dagger, also sent by the King, which had previously been carefully warmed, and was expected to produce immediate death. But the victim's death was vainly watched for, and when the meeting broke up the poor little animal was still alive, and so remained. It is amusing, too, when we note the patient care and earnestness with which, at great trouble and expense, they

pursued their credulous inquiries concerning the wood that attracted fishes, and the fish that always turned to the quarter whence the wind was coming when suspended by a thread; as to whether snow-flakes were, as reported, larger in some countries than they are in others, and whether young vipers could be produced from the liver and lungs of old vipers, ground into a powder; as to whether the corn rained down from heaven at Norwich would, if planted, grow, and as to the nature of the white powder which at once made cold water hot. Nor is it, with the light we have from the candle they lighted, remember, less curious to see them, full of child-like wonder, performing their experiments with the horn they believed to be that of the unicorn, setting a spider in the middle of a circle of powder made therefrom, anxiously watching it, and very much puzzled by its contemptuous disregard of their efforts to confine it within that supposed mysteriously wonderful circle. Again and again was the spider caught and put back within the magic powder. Again and again did the long-legged insect straddle indifferently over it and hurry away. But once—the eagerly bent-forward heads of the philosophers noted it with a sudden start—once the spider while in the midst of the powder actually paused! Imagine how they held their breath amidst profound stillness, while every distended eye was full of startled expectation. But nothing wonderful came of it. The spider, having made up its mind which way to go, pursued its scrambling way as before. It was only a little uncertainty on its part—nothing more. They write to one of their foreign correspondents—one Sir Philiberto Vernelli, “resident in Batavia in Java and Major”—requesting him to ascertain “whether diamonds and other precious stones grow again after three or four years in the same places where they have been digged out;” and “What river is that in Java that turns wood to stone?” and again, “Whether in the island of Sumbero, which lieth northward of Sumatra about eight degrees northern latitude, there be found such a vegetable as Mr. James Lancaster relates to have seen, which grows up to a tree, shrinks down, when one offers to pluck it up, into the ground, and would quite shrink (down) unless held very hard? And whether the same, being forcibly plucked up, hath a worm for its root, diminishing more and more according as the tree groweth in greatness; and, as soon as the worm is wholly turned into the tree, rooting in the ground, and so growing great? And whether the same, plucked up young, turns up by the time it is dry into a hard stone much like to white coral?” Things quite as extraordinary crop up in old minutes of the Society, wherein we read of “Burning-glasses made of ice,” of “snake-stones and other antidotes,” of frozen swallows taken from under the ice of rivers and restored to life, of birds in shells adhering to trees in multitudes. The spirit of simple earnestness and humility so clearly visible in these early inquiries into things most incredible and strange crops up also in the first Catalogue of the Society's Museum, which was first established in Gresham College, Bishopsgate, wherein we are told how, on certain occasions, the porcupine shoots out its quills at pursuing enemies; how certain squirrels cross rivers by the aid of bark from a tree, and erect their tails to serve as sails; how elephants go mad in winter when it begins to rain, “and so continue from April to September chained to some tree, and then become tame again;” how unfortunate “tortoises, when turned on their backs, will sometimes fetch deep sighs, and shed abundance of tears;” how the feathers of the humming-bird are “set in gold, and sell at a great rate,” and of “a mountain-cabbage one reported, 300ft. high.” And for the collection itself the same credulity accepted everything, the absurdity of which had not been fairly demonstrated. Thus we find amongst other similar wonders, it contained “a bone, said to be taken out of a mermaid's head,” “a stag-beetle, whose horns wove in a ring are good against the cramp,” “a siphatter, said with its sucker to fasten on a ship and stop it under sail,” and “the white shark, which sometimes swallows men whole.”

The London Medical Record.

Authors of Papers, Theses, &c., will assist in the preparation of summaries by our reporters, by forwarding separate copies of their works.

BEAUREGARD ON IDIOPATHIC SALIVATION.

La France Médicale of July 14 and 17, 1875 (nos. 56 and 57), contains an article by M. Beauregard giving details of two cases of idiopathic salivation. He was induced to publish them by the report in the same journal for March 13 last of a case read to the Société de Médecine pratique de Paris. This case occurred in an old lady, who had long suffered from indigestion. After a great trouble had befallen her, she found her pillow soaked with saliva. The secretion always occurred at night, and amounted to at least a pint. Medical treatment appeared entirely without effect. The general health of the patient did not seem to suffer, notwithstanding this profuse discharge. M. Beauregard remarks that idiopathic cases of ptyalism become rare in proportion to the advance of our knowledge. By idiopathic is meant cases in which no cause is discoverable. Singular cases of salivation have been handed down to us from very remote times. Not to mention the remark of Hippocrates on laryngeal phthisis,* there were during the seventeenth century a large number of theses, memoirs, and observations, which have been carefully collected by Franck (*Pathologie Médicale*, tome v. obs. ii. 1842). In more modern times Portal, Sydenham, Morgagni, Franck, Tanquerel des Planches, Donne, Lhéritier, Denis, Golding Bird, Simon, Wright, and Landerer have all recorded rare cases. Very lately M. Dujardin-Beaumetz gave two excellent clinical lectures on this subject at the Hôtel-Dieu [published by M. Campenon in the *Gazette des Hôpitaux*, 1872, pp. 111 et 117.] Thus from time to time new sources of salivation have been discovered, and it may not be uninteresting to enumerate the chief causes now recognised as giving rise to ptyalism. This symptom is never absent in the various forms of stomatitis, especially at a certain stage in the membranous form of ulcers of the mucous membrane; in glossitis, aphthæ, and during dentition; after the use of certain mineral poisons, salts of mercury, of bromine, iodine, gold, etc.; or of certain sialogogues, such as pyrethrum (pellitory of Spain), and pimpinella saxifraga, vinegar, pimento, betel-nut, some zymotic poisons, as variola, malarious fevers; and lastly cadaveric and morbid emanations. Gubler remarks that some students are not able to dissect a single hour without being attacked with salivation of a distressing kind. This group, comprising the commoner forms of salivation, has been called by Spring, *Ptyalism from direct irritation*. There is, however, a group of cases, no less dependent upon irritation, and just as truly reflex, but caused by sympathy with remote organs, the salivary

glands and their ducts not being primarily affected. The greater number of these must be attributed to the stomach. This is perhaps not wonderful, when we remember Dr. Beaumont's experiments on Alexis St. Martin, and the more recent ones of M. Maillot, on a man whose œsophagus had been divided. He observed that every time that food was put into the stomach by the lower end of the œsophagus, saliva could be seen running from the upper and divided portion. An abundant flow of saliva is one of the first effects of hunger. In a great number of the diseases of the stomach, spontaneous, and often intractable, salivation is one of the symptoms. It is so in the indigestions, in cancers, perforating ulcers, etc., and in tapeworm also. It is also met with in uterine and ovarian affections, especially in congestive states, such as pregnancy and catamenial periods. G. P. Franck, Keck, Rahn, Widiking, Portal, and others, assert the same for the liver and pancreas, especially when cancerous. This is, however, less certain.

Next to ptyalism from irritation, authors describe a *critical salivation*, such as one sees in the second week of typhoid fever, in confluent variola, certain forms of severe meningitis, in dysentery (Sydenham), and such as we sometimes endeavour to produce, in such cases, by the therapeutic use of mercury. 'Clinical observation has also established the existence of complementary salivation succeeding the suppression of the catamenia (Royer-Collard), or of habitual leucorrhœa (Tanquerel des Planches), and other analogous circumstances, such as the diminution or cessation of the urine or perspiration.*' Physiologists (as Bidder and Schmidt) have shown that the parotids, like the skin and kidneys, may serve as channels to eliminate the watery portions of the blood, and may thus be called upon to supplement deficiencies in this direction (Gubler). This will explain the singular cases recorded by Gimpert, Forestius, Rondelet, and Solander from the effects of cold, and by Franck in the course of chronic skin-diseases.

There is lastly a class of cases of ptyalism, which may be called *nervous*. Recent physiological works throw much light upon this. Moral emotions, anger, hysteria, epilepsy (Voisin), are often thus accompanied. Fr. Homann (*Diss. de Salivæ necess. Inspectione*) says that lypemaniacs and hypochondriacs are subject to salivation. 'Nihil frequentius occurrit in praxi, quam quod hypochondriaci, melancholici, quotidie salivam exspuunt largissimam.' The physiology of the lingual, glosso-pharyngeal, lesser petrosal, and chorda tympani nerves explains the salivation which accompanies their functional or organic lesions. [See the *Compendium de Médecine pratique* of Moneret and Fleury, for a case of facial neuralgia inducing salivation; and the *Gazette des Hôpitaux*, 1868, for excision of the lingual nerve by the medical missionary, Maggioni. Burgius, in *Miscell. Acad. Nat. Cur.*, section ii. an. ii. obs. 173 (p. 338), gives an example of chronic tinnitus aurium terminating in spontaneous salivation; and J. Power (*Medical Transactions*, vol. ii. p. 34) mentions a case of ptyalism induced by a tent of lint which had been left in the ear. These nerves are also affected in intracranial tumours.] But nervous ptyalism always coexists with disorders of some

* 'Et ubi sanguinem exspuere desierit, salivam multam liquidam exspuit, quandoque vero etiam viscosam.'—Hippocrates, *De interiorum affectuum causis liber*.

* Hunerwolff has seen gouty metastasis to the throat and soft palate followed by salivation. Hoffmann mentions periodical salivations supervening on an attack of gout. (*De Podagrâ retrocedente*, par. ii.)

other organs. Tanquerel des Planches says he does not know a single case of purely *hereditary* nervous or other salivation apart from some other disorder.

We thus see that the majority of cases of excessive flow of saliva can be referred to one of these four classes [*irritative, critical, complementary, or nervous*]. There are, however, cases the cause of which is very difficult to discover. The following is an example.

D., aged thirty, of light complexion, strongly built, a lattice-maker, having several very healthy brothers, had for ten days suffered from a singular salivation. His antecedents furnished no explanation. He smoked but very moderately. He was not a drunkard. The salivation came on suddenly; it was increased by exposure to the air. The quantity of saliva was excessive, compelling him to spit incessantly. At the beginning it was intermittent, and first one salivary gland, then another was attacked, which he knew by slight pains in the glands, and by variations in the quantity of the saliva. The mouth, carefully examined, appeared healthy. His digestion was good, he had no pains in the head, and his general health was excellent. This case would have justly been classed as idiopathic, had it not subsequently been discovered that the man had gonorrhœa. Bayle, in the *Nouvelle Bibliothèque Médicale* for 1828, mentions a case of spontaneous salivation in a man of sanguine temperament and good constitution, aged thirty years, simultaneously with a slight gonorrhœa. He had never had any venereal disease, nor used any mercury. The saliva was normal, and the mouth healthy. After a few days of mild treatment the gonorrhœa disappeared, and the pytalism persisted. These cases may then be referred to the class of irritation from sympathy.

There are other cases where the causes seem multiple and complex, as in this case, occurring in the practice of M. Beauregard senior, at Havre. M. V., a captain in the merchant service, who had retired for some years, aged forty, of healthy and vigorous constitution, had had from infancy a tendency to squamous and scabby eruptions. His mother had also suffered many years from eczema of the scalp. He had also suffered from syphilis, which had left no permanent marks. In spite of voyages to the tropics, his health was good till nearly forty, when he was attacked in Calcutta with something like cholera [*dysentery.—Rep.*] which lasted six months. Since then he had several times suffered from severe diseases of the digestive organs, as about 1860 he had eighteen months of severe gastritis. In 1863 he suffered a relapse, with œdema of the legs. All this passed off, leaving him dyspeptic, with anæmia, and a tendency to syncope, to vomiting, and to headaches. For three years past his salivary secretion had been excessive. It was, however, only for one year that he had suffered from the singular salivation about to be described. Towards March he was called to Metz, and visited the battle-field of Gravelotte. It was a severe season; he took cold, and towards the end of a meal was attacked with facial paralysis, which soon disappeared, leaving behind it a profuse pytalism. Two months afterwards he was attacked with severe membranous and ulcerative stomatitis. The soft palate, gums, and inside of the cheeks were covered with thick white membranes. The tongue was greatly swollen and painful. Though obstinate, this yielded to chlorate of potash and alum gargles, etc. Now he has psoriasis

of the scalp and nails, is much emaciated, and often faints. He also suffers from heaviness, tendency to sleep, and slight giddiness on rising in the morning. His sight is feeble; there is some amaurosis, and the field of vision is circumscribed. He cannot distinguish some colours. There are pains in the loins, and his hands are somewhat tremulous. On stormy days, he sometimes experiences very severe and painful shocks. He does not define the exact seat of the pain. Ophthalmoscopic examination did not reveal anything special. Yet in the left eye an object required to be placed on his cheek to be seen. The Daltonism is intermittent. Examination of the heart, lungs, liver, spleen, and kidneys disclose no marked physical signs of disease. The belly is rather tympanic. There is tenderness on pressure in the epigastrium. The mucous membrane of the mouth is rather pale. No lesion is discoverable in the salivary glands. The sublingual glands are a little swollen in the early morning before he expectorates. There are slight fissures on the tongue. After the attacks of syncope and vomiting, his pulse intermits every fourth beat. He spits from four to seven pounds of saliva daily. Stormy weather and chalybeates increase the flow. After bilious vomiting it is lessened for some hours; this happens frequently now. Milk and Vichy water render the saliva less tenacious. Liquids, especially water, transform the secretion into a viscid mass, easily swallowed. Solid food is rendered disgusting by it, on account of its glutinous nature. There is neither sugar nor albumen in the urine. That passed at night is pale, copious, slightly turbid; the day-urine is scanty, red, and thick. The saliva has a specific gravity of 1.001 only, instead of 1.0088; it is notably alkaline, but contains neither sugar nor albumen. The secretion continues at night. He has often taken calomel as a purge. The stomach affection, cold, and mercury seem the chief factors in this case. As regards the effects of medicines, M. Tanquerel des Planches says, that in the twenty-nine cases in his work there were eight spontaneous cures, twelve appeared due to medicines, and in nine cases the complaint was persistent. Of remedies, opium has been most praised. Belladonna is now generally preferred. Astringents of various kinds, quinine, and even mercury, though it increases the flow at first, have all been recommended. Guimper cured one patient; but in Mitscherlich's case it failed, though conjoined with diet, for there was a relapse in three weeks. One method of treatment—the use of diuretics and diaphoretics—has not been tried as, perhaps, it should be. Jaborandi is now being used in the case of M. V. above given. It has temporarily increased the flow of saliva. The results of its employment are as yet uncertain, as it is still being given.

W. BATHURST WOODMAN.

HEUBNER ON SYPHILITIC DEGENERATION OF THE CEREBRAL ARTERIES.

THE most considerable addition to the literature of this subject is a monograph by Dr. Heubner, of Leipzig, one of the members of the Medical Faculty in the University of that city. Although his book was published last year, as it has not been circulated in this country and is not generally known here, we purpose giving a short account of it, more especially dwelling upon the anatomical descriptions.

Dr. Heubner commences by taking up the history of his subject, beginning with the writings of

Nicholaus Leonicens in 1497; he then passes to the recent history of the subject, and publishes forty-five cases which he has collected from the journals; to these he adds five cases of his own, with very full histories and *post mortem* examinations of the tissues both macroscopically and microscopically; these, in fact, form the material for his next chapter, which contains a very interesting account of his generalisations of the results of his observations in the previous cases. The following is a summary of his views.

First Stage: Anatomical Appearances.—An aggregation of small cells or nuclei is observed lying close under the normal lining layer of epithelium, and between it and the membrana fenestrata. These nuclei are closely packed together, but a little later on show between them a delicate stroma. The tumour presses forward the normal epithelium so as to encroach upon the lumen of the vessel, but at times the bulging is outwards so as to press upon the membrana fenestrata; he thinks this is due to variations in the blood-pressure depending upon the position of the artery, the direction of its axis, and the strength of the heart's systole. He believes the above-described nuclei or small cells to have originated by proliferation from the normal epithelium of the lining membrane. As this new formation goes on developing in size, round cells make their appearance in groups lying in the muscular and fibrous coats; these, he says, are wandering cells derived from the vasa vasorum, going to the tumour to nourish it; this process is necessitated by the weakening of the blood-supply. The tumour continues to grow, arranging itself round the lumen, narrowing it, but becoming itself compressed to form an excentric layer; complete obliteration of the lumen is long before it occurs, and thrombosis is rare on account of the gradual development of the obstruction. The morbid process grows in the long axis of the vessel, and passes into the smaller branches.

Second Stage: Organisation of the New Formation.—Little lumina make their appearance in the tumour; they are most numerous at its periphery. These are newly formed capillaries, and their direction is in the long axis of the original vessel; at first they probably contain only lymph, but afterwards blood. This vascularisation explains the absence of fatty degeneration; he has only seen an occasional granular cell, which was probably a wandering corpuscle. The next change is in that part of the tumour next the epithelium, which becomes more homogeneous, less cellular, and finally assumes the aspect of a membrane which Dr. Heubner believes to be the homologue of the original membrana fenestrata. Immediately internal to this, the cells have become spindle-shaped, and have arranged themselves circularly round the lumen of the vessel; beyond these again is another layer like embryonal connective tissue, but differing from that by the intercellular substance being fibrous, not jelly like; in fact, resembling the striped laminae of the aortic lining membrane. In these two layers the author sees homologous muscular and fibrous coats, and says the anatomical appearance is so exact that one can say a completely new arterial coat has been formed from the new formation. In speaking of this, he refers to the normal development of vessels from the epithelial coat of the embryonic capillaries, and to the observations of Billroth and Czerny on the formation of new vessels in plexiform sarcomata; he also refers to the formation of new bone after syphilitic periostitis as an analogous process.

Third Stage: Degeneration.—This is probably a later stage of the affection, but the second stage may be only partially completed, or never occur at all. The artery may be completely occluded by the nuclear proliferation; the cells disappear from the inner layers of the new formation, the interstitial tissue increases, shrinks, and drags in the original coats from all sides, crumpling and bending the membrana fenestrata; the lumen has quite disappeared, and in its stead, within the membrana fenestrata, lies a partly loose, partly dense bundle of connective tissue, sparingly supplied with capillaries. The cells of the muscular coat atrophy and disappear, and in place of the circular fibres there is only a network of elastic fibres enclosing detritus; at last even this becomes absorbed; the membrana fenestrata is no longer distinguishable from ordinary connective tissue, and in the place of the artery is left a slender fibrous thread, which is torn by the least manipulation.

He points out that this disease differs essentially from atheromatous degeneration, in its duration, anatomical appearances, and mode of termination. Atheromatous degeneration is essentially chronic, taking years, even decades, to become complete; while, on the contrary, this disease seems capable of producing extreme degeneration in one or two years. The anatomical appearances in atheroma are at first those of a true hypertrophy of the inner coat, for instance, that of the basilar artery becomes like the normal inner coat of the aorta. The calcification and fatty degeneration of atheromatous arteries are quite peculiar, and have nothing in common with the method by which syphilis destroys the vascular system. Lastly, atheroma attacks the greater and middle arteries, syphilis the middle and smaller ones; syphilis is, as far as his present observation goes, restricted to the arteries of the brain, atheroma attacks arteries in all parts. In speaking of the nature of the new formation in the syphilitic form of disease, he says that he does not know any reason for believing it a specific product, but considers it 'a quasi-inflammatory cell-proliferation of the epithelium, such as we find in the healing of wounds; but he believes that it is peculiar to vessels containing syphilitic blood, and thinks it probably due to the irritation of a specific syphilitic virus.

The next chapter is devoted to a description of certain anatomical investigations which Dr. Heubner was induced to undertake with the hope of throwing some light upon the physiological effect of this disease. These are some of his conclusions.

1. The six arteries rising from the circle of Willis have free communications with one another in the pia mater, and can thus supplement one another.

2. Each of the small branches, both anterior and posterior, going to supply the central ganglia, distributes itself in a definitely circumscribed area without anastomosing.

3. There are two sets of vessels given off from the primary divisions of the circle of Willis. The first, or central, are like the straight slender shoots that rise round the base of a forest tree and have few secondary branches; the second, or peripheral, form a vast ramifying mass like the head of the same tree. The central run through the perforated spots to the central ganglia and are terminal arteries; the peripheral ramify and inosculate in the pia mater and pierce the grey matter to supply the hemispheres. These facts enable him to arrive *à priori* at the

results of certain pathological conditions; for example, plugging of a peripheral artery would lead to temporary loss of consciousness, ending probably in recovery; plugging of a central artery, on the other hand, would lead to hæmorrhagic infarction or softening. He then considers the consequences of the arterial changes upon the brain-functions; he cannot say what effect the mere change from elastic to somewhat rigid tubes would have upon the blood-supply, but we may be sure the partial local obstructions and narrowing of the arteries in some places, and their complete obliteration in others, has great effect on the general vascular tension. Ludwig (*Die Physiologischen Leistungen des Blutdrucks*, Leipzig, 1865) has shown the dependence of the proper functional activity of the brain upon a proper degree of tension in the vessels. Besides, the retardation and diminution of the stream must cause defective nutrition and oxygenation, as well as probable retention of waste products in the lymph-spaces. He thinks that there is therefore sufficient physiological explanation for the loss of consciousness, delirium, and typhoid condition often noticed; he draws especial attention to this somnolent condition as being altogether something *sui generis*, and almost pathognomonic of the affection; he describes it as 'defective consciousness without entire loss of intelligence, the suppression of voluntary actions without the abolition of will impulses, the appearance of delusion and delirium varied by a sudden return to reason, a condition of half-sleeping, half-waking, half-dreaming.' The last chapter is devoted to a systematic description of the disease as it appears clinically. Under etiology, he places constitutional syphilis as the prime cause, thinks it is not affected by sex, that it is most common between thirty and forty years of age, and that there is some reason to believe in the influence of hereditary predispositions to diseases of the nervous system. The symptoms are (including the usual catalogue of nervous ailments) hemiplegia or apoplexy, loss of mental power, convulsions, contractions, the somnolent condition described above. Affections of single nerves are rare; aphasia is common; there are vomiting and fever during sudden attacks like convulsions, or preceding death. Its duration is difficult to define, from a few months to years. The diagnosis depends on the syphilitic history chiefly; but hemiplegia occurring in youngish people, apoplexy, and loss of intelligence, would be suspicious. As for prognosis, he has known cases to recover; but the prognosis is bad, as sudden death may occur at any time, or life may be prolonged. If deep coma occur, the result is inevitably fatal. In the way of treatment, he recommends the administration of mercury by inunction till salivation is effected, low diet, a sort of 'hunger-cure'; if iodide of potassium be used, it must be in doses from 30 to 150 grains in a day. If there be symptoms of anæmia of the brain, the patient must be kept in the horizontal position, and wine and digitalis should be administered.

PROFESSOR SCARENZIO has been appointed to teach operative surgery in the University of Pavia, in the room of the late Professor Porta.

DR. CONCATO, Professor of Clinical Medicine in the University of Bologna, has been, at his own request, transferred to the same chair at Padua; and is succeeded at Bologna by Dr. A. Murri.

TWO CLINICAL LECTURES ON THE CAUSES, THE PREVENTION, AND THE CURE OF LACERATION OF THE PERINÆUM. BY WILLIAM GOODELL, M.D., CLINICAL PROFESSOR OF DISEASES OF WOMEN AND CHILDREN IN THE UNIVERSITY OF PENNSYLVANIA, ETC.*

LECTURE I.

Gentlemen,—I bespeak your earnest attention this morning, because I hope to teach you how to avoid one of the worst of the non-fatal lesions which can befall a woman in child-birth, and to show you a simple operation by which you can assuredly cure her.

Next to subinvolution of the womb, the laceration of the perinæum is, perhaps, the most common lesion of labour; especially so among the poor, who are attended by midwives, by medical students, or by recent graduates. From an examination of the inmates of an institution to which I am attached, I find that in this class of society complete laceration of the perinæum takes place more often than once in a hundred labours, while, of course, the proportion of bad rents not involving the sphincter ani is much larger than this. So common, indeed, is this lesion that, judging from the past experience of our clinic, I shall this winter have occasion several times to perform before you the operation for the restoration of the perinæum. As an earnest of this, I now bring before you a woman who, in her first and only labour, met with the great mishap of having her perinæum badly torn. Instead of a close and symmetrical contact of the labia majora, look at this irregular and gaping opening, extending from the clitoris to the lower verge of the anus. The perinæum has disappeared; the upper segment of the anal ring is torn through; the rent extends up the rectum for at least an inch, and one great cloaca takes the place of the vulval and anal openings. For six years she has suffered from symptoms growing more and more distressing, until at last they have driven her to us for relief.

What the nature of these symptoms is you will best understand by consulting this diagram, which is reduced from Savage's excellent plate. From it you see that the floor of the female pelvis is made up of a mass of muscles so interlaced that hardly one of them has a special property which is not in a measure shared by the others. Upon removing the skin and superficial fascia, we come, midway between the lower vulval commissure and the anus, to a highly elastic and dense white tendinous structure, called the perineal body. It seems to be made up by the fusion of several muscles which meet there. Thus, the external sphincter ani, which starts from the coccyx, surrounds the anus, and is inserted in the perineal body. So, on each side, does the transversus perinæi. On the other hand, each sphincter vaginae, called also bulbo-cavernosus or compressor bulbi, arises below in the perineal body and sphincter ani, passes up around the vulval opening like a fleshy ring, and converges to meet its fellow over the dorsum of the clitoris. The property of this muscle is to pull down the rigid clitoris into contact with the male organ, to squeeze out the contents of the vulvo-vaginal glands, and to compress the dorsal vein, and also the bulbs of the vagina, so as to obstruct mechanically the current of blood and produce a turgescence of all these erectile organs. The levator ani is the next important and powerful

* From the *Philadelphia Medical Times*, November 1875.

muscle of this group. It arises from the ramus of the pubes and the spine of the ischium, and is inserted into the coccyx and the sides of the vagina and of the rectum. By these attachments, and by interlacements with the corresponding muscle on the opposite side, it and its fellow constitute the true constrictor of the vagina.

Now, without further comment, a mere glance shows that the loss of every fibre at the point of fusion of these muscles entails a corresponding loss of power in the floor of the pelvis, and a consequent impairment of support to the reproductive organs. The sustaining power of the vaginal column depends upon the integrity of its perineal abutment. It is the tonicity of the vaginal walls and the pelvic attachments of the uterus that mainly keep the nicely poised womb in place. These, in a case of torn perinæum, may not at once yield; but they will sooner or later; for air gains access to the womb, irritating and congesting it to such a degree that it will ultimately flex or prolapse from an acquired hypertrophy. The air thus sucked up into the vagina is very liable to escape audibly, constituting that very mortifying disorder which our Teutonic brethren call 'garrulity of the vagina.' The anterior wall of the vagina, being now unsupported, will descend, dragging with it the bladder. The greater the rent, the greater will be the dislocation of the pelvic organs, and the greater the evils entailed. Again, rents of this kind are attended with more or less impairment of the sexual functions. Thus, from the injury sustained by the perineal body, the vulva becomes enlarged, the vagina relaxed, the bulbs of the vagina but slightly compressed, and the sexual act blunted on the part of the male, and imperfectly responded to by the female. Partly from this lack of reciprocity, and partly from the necessarily shortened vagina, which rejects the semen as soon as ejaculated, the woman, like the patient before us, often remains barren. But should the rent traverse the whole perinæum, and divide the anal sphincter, or extend through the recto-vaginal septum, then, in addition to the above train of evils, there will be an involuntary escape of flatus, and an incontinence of the fæces when at all liquid. The woman's clothing is soiled without warning, her person becomes repulsive to her husband, and her company undesired by her friends. Seclusion and mental anguish undermine her constitution. Few calamities can be more grievous than this one. To keep her bowels costive, this woman takes a daily dose of opium. A young married lady, whose perinæum I restored not very long ago, got into the same habit. But, however bound her bowels were, she would soil her linen whenever it thundered or she otherwise became nervous. Every two or three weeks she was obliged to take an aperient, and would then have to spend many hours on the commode—seventeen hours on one occasion—after taking a dose of castor-oil. In order to spare herself the mortification of breaking wind before others, this lady shunned the society of her friends, and secluded herself in her bedroom. She did not even join the family at their meals, she never went out until after dusk, and never dared to ride in a street-car. Altogether, she was in a sorry plight. Since, therefore, the urgency of the symptoms, and since, also, as you will shortly learn, the chances of a successful operation depend upon the condition of the sphincter ani, laceration of the perinæum may, for all practical purposes, be divided into those which involve the sphincter and those which do not.

The causes of these lacerations may be summed up as follows: 1st, Rigidity, dryness, and congestion of the soft parts, as in first labours; 2nd, Absolute or relative disproportion between the size of the head or of the shoulders, and that of the vulva; this also includes the presence of one forearm, or both, along with the shoulders; 3rd, Every cause, whether moral, anatomical, or physiological, that precipitates the passage of the head through the soft parts—as, for instance, violent straining efforts through great nervous excitement, a small head, a straight sacrum, or an overdose of ergot; 4th, Faulty mechanism of labour, such as incomplete flexion or extension of the head; or an occiput rotating posteriorly; 5th, Keeping the limbs straight and in close contact at the moment of the birth of the head; 6th, Causes dependent on the physician, such as the use of the forceps, a faulty method of supporting the perinæum, or meddlesome midwifery.

For cases of rigidity, or of disproportion, or of an undersized vulval opening, anæsthetics will be found of great service. They will also restore moisture to a dry and congested perinæum, and curb uncontrollable expulsive pains.

Many lacerations are, in my opinion, owing to the common mistake of making so long continued and so firm a pressure on the perinæum with the hand as to make it hot, dry, and unyielding, and also to prevent it from undergoing an equable dilatation. The portion thus compressed cannot take its share of the general tension, and the strain is thrown on the fourchette. Further, the pressure of the hand, by obstructing the free circulation of blood, impairs the vitality of the perinæum. Bruised, congested, and benumbed, it is no longer a living tissue, capable of responding intelligently, so to speak, to the requirements of the occasion—when to repel, when to solicit the advance of the head; and this nice point nature can very generally determine far better than the physician. Again, the word 'support,' as applied to the perinæum, is a misnomer. No 'support,' in the ordinary acceptation of the word, is afforded to the perinæum by direct pressure. If such a method ever accomplish any good, it is by retarding the advance of the head; in other words, by supporting the head through the interposed perinæum, and not by supporting the perinæum itself. Why not then support the head by pressure directly applied to it, instead of through a medium which requires perfect freedom from all restraint in order to undergo the requisite and inevitable amount of dilatation? Finally, a majority of the advocates of 'support' contend that it is most needed at the very moment of expulsion. But the woman, in the agony of the final throes, is very likely to jerk herself away from the hand of the accoucheur. Of course, then, the perinæum, being abruptly released from the counter-pressure, is more liable to yield to a strain suddenly sustained for which its fibres are unprepared. Obstetric teachers recognise this danger, and in vivid language caution the student against it.

Although I believe that in the vast majority of labours the perinæum does best when let alone, yet cases do undoubtedly arise which demand intelligent assistance; nor can the line of demarcation be always drawn between natural and morbid conditions. Apart from a direct and retarding pressure upon the presenting part itself, the only manual aid that I permit myself occasionally to give is as

follows. Insert one or two fingers of the right hand into the rectum, and hook up and pull forward the sphincter ani towards the pubes. The thumb of the same hand is meantime to be placed upon the foetal head, scrupulously avoiding all contact with the perinæum. For this method I claim the following advantages. (a) By pulling up the sphincter ani towards the pubes not only is nature imitated, which always dilates the anal orifice, but the perinæum is brought forward without direct pressure, and its dilatation is diffused over its whole surface, causing a corresponding relaxation of the strain on the posterior commissure in the line of its raphé. In addition, its muscular fibres are crowded up to, and consequently strengthen, the line of greatest tension; just as a prudent general hurries up reinforcements to the point of attack. (b) The same force which dilates the sphincter ani compels the occiput to hug the pubes and favours extension, especially if the fingers in the rectum are hooked over the prominences of the foetal face or over the chin. (c) This aid is not liable to sudden interruption from the movements of the woman. (d) The thumb of the same hand, together, if needful, with the fingers of the free hand, can by direct pressure upon the presenting part restrain its too rapid advance, without exciting that reflex uterine action which is frequently evoked by the irritation of contact with the perinæum. (e) The circulation of blood remains free; the nerves are not benumbed by a double pressure, viz., by that of the hand and that of the presenting part; and the perinæum, therefore, continues in its natural condition, that of a living, elastic, and sentient tissue.

Misdirected traction on the after-coming head, viz., too much in a downward direction as the head is about to emerge, causes the chin to hook over the perinæum, and is in a primipara very commonly followed by a bad rent. The lesson, therefore, taught is, at the close of a breech-labour needing help, to turn the woman on her back, to separate the knees, and to carry the child's body well up between them. But in the majority of cases of laceration in which the sphincters ani are involved, you will, I am sorry to say, find, as in our patient, that the labour has been an instrumental one. Yet there are cases in which the very use of the forceps protects the perinæum. Thus, for instance, whenever the pubic arch is too narrow, the sacrum is too straight, or the head, in an occipito-anterior position, is over-flexed, and the vertex bears on the perineal centre and threatens to perforate it; whenever, in an occipito-posterior position, the head is too little flexed, the forceps is urgently needed. Why, then, is a forceps delivery so often the cause of injury to the perinæum?

To this question there are many answers. In the first place, through a false delicacy, many physicians deliver the child under the sheet; they work in the dark, and cannot see what they are about. In difficult forceps-cases, the physician, worn out by direct traction, is very likely to brace his foot, or even both feet, on the edge of the bed. The traction thus exerted is uncontrollable; and when the head passes the narrow brim, which it does usually with a jerk, its momentum cannot be checked before it has torn its way through the perinæum. Again, in cases requiring apparently but little traction, the use of the forceps will often occasion a slight tear in the vagina, which the passage of the shoulders prolongs through the perinæum. Delivery by the

forceps, even in skilful hands, will often produce laceration; for the head is liable to be brought down too quickly upon the unprepared soft parts; and it becomes a very nice point, indeed, to determine the exact moment when the head may be delivered with impunity. The cautious physician is liable to be caught, as it were, 'on the centre.' He sees or feels the perinæum stretched out to a perilous thinness, and the fourchette almost cracking under the strain. In doubt whether the moment has come to raise the forceps-handles and turn out the head, or to depress them and thus restrain its advance, he wavers, and in a twinkling the fibres part. On the other hand, the impatient physician is tempted to turn out the head before the parts are sufficiently dilated. Finally, what is not unfrequent, at the last moment the physician's courage fails him, and he lowers the forceps-handles just as the head is about to emerge—a course equally fatal to the integrity of the perinæum. From too hurried a delivery, or from faulty traction, I have seen so many bad rents attending the use of this instrument, even in practised hands, that I cannot withhold the opinion that, in the majority of cases, nature can accomplish the final delivery of the head through the soft parts much better than the physician. My advice to you, therefore, is that, other things being equal, as soon as the perinæum is well dilated you should remove the forceps, unless the blades are so firmly imbedded in the child's tissues that their withdrawal requires a force which might hasten the delivery of the head. This practice, if not so brilliant, you will, in the long run, find the safer.

Through sentiments of delicacy many lacerations of the perinæum escape the notice of the physician. I have operated on several cases in which the woman has assured me that the discovery was not made until the bowels, after a purge, had proved uncontrollable. After the delivery of the placenta, you should, therefore, make it a rule to introduce the index-finger into the rectum and the thumb into the vagina. By this double touch you can estimate the thickness of the intervening flesh, and thus determine whether an extensive laceration has taken place. If a rent be discovered, decently inspect the parts. By daylight this examination can usually be made without the knowledge of the patient. When candle-light is needed, you may be compelled either to make some excuse or boldly to explain your object. Sometimes a formidable hæmorrhage takes place from the perineal wound, and yet you will not discover its source unless you have all your wits about you. You will naturally infer that it comes from the womb, and will, accordingly, mistreat it by resorting to the usual remedies for *post partum* hæmorrhage. Make it, therefore, an inflexible rule to stretch open the vulva and visually examine the perinæum, whenever blood seems to escape from a firmly contracted womb.

Although labour is the common, yet it is not the invariable cause of these lacerations. Several cases are on record which happened from the breaking of a cracked chamber-pot. Women have been gored by cattle in this portion of the body. In sliding down the sides of haystacks they have been impaled by the handle of a rake, of a hoe, or of some other implement. But whatever the cause, the treatment is of course the same.

Since so large a share of a woman's health and happiness depends upon the integrity of her peri-

næum, what should be your rule of action when she meets with this injury? Unless the rent is simply cutaneous, or very slight indeed, and not extending much beyond the fourchette, it should not be left to nature, for nature is here too capricious to be depended on. You must perform the primary, or immediate, operation—that is to say, you must at once sew up the wound. Now, although this advice is sharply criticised by some very good authorities, I offer it to you with the greatest confidence of its soundness. The fears of septicæmia entertained by some physicians are purely hypothetical; for, although the suture tracks form, in one sense, new foci of infection, yet they close up a raw surface whose area is vastly larger than theirs. Should hæmorrhage be present, the sutures will invariably check it. Clinical experience proves that a very large measure of success follows the immediate operation. Further, it is far more rational to take advantage of the necessary confinement in bed after delivery, and to close the wound at once, while its surface is raw and the maternal soft parts are comparatively numb and insensible, than to postpone the operation to a time when the woman shall be nursing, when the cicatrised flaps shall demand quite a formidable and tedious operation for their denudation, and when a special confinement in bed for two weeks or more will be needed. Had the immediate operation been performed on this woman, she would most likely have been spared six years of suffering, and the tedious secondary operation which she has made up her mind to undergo next week.

My own method is, immediately after the delivery of the placenta to pass deeply two, three, or more wire sutures, securing each one by merely twisting its ends together. Each suture is entered about an inch from the cutaneous margin of the wound, and is made to emerge on the mucous membrane of the vagina very near to the edge of the raw surface. In addition, the first stitch must always be entered a little *below* the lower angle or fork of the wound. From the flow of bloody lochia, and also from the deep congestion of the soft parts induced by labour, you will not always find it easy to distinguish the raw surface from the mucous membrane. A good light, will therefore be needed. It will also be well to stuff a sponge high up in the vagina, and temporarily cork up the lochia until the sutures are passed. This sponge you will of course remove before the sutures are twisted together. Some very extensive rents are merely skin-deep. I have seen one extend nearly half round the anus without involving the perineal body or a single fibre of the sphincter. Such a rent is merely cutaneous, and needs superficial sutures only. The *serres-fines* will here be found very useful. They must be placed about half an inch apart, and made to grasp to their fullest extent both edges of the wound. The first one should nip the skin just below the fork of the wound, and the upper one just above its upper ends. If the edges of the rent are ragged, they should be trimmed off with the scissors. The *serres-fines* need not be kept on longer than forty-eight hours, and superficial sutures not longer than four or five days. When the laceration is not great, no other treatment is necessary excepting that of keeping the bowels bound for a week. But when the rent extends to or through the sphincter ani, or several deep sutures have been introduced, then the same precautions must be taken—viz., those of drawing off the urine, of bind-

ing the knees together, and of keeping the bowels costive, etc.—as I shall enjoin upon you when describing the after-treatment of the secondary operation.

(To be continued.)

ON MORPHIOMANIA. BY DR. EDWARD LEVINSTEIN, PRINCIPAL MEDICAL OFFICER OF THE ASYLUM AT SCHOENEBERG, BERLIN.*

GENTLEMEN,—Allow to me to direct your attention to a disease for which I can find no more appropriate name than morphiomania (*Morphium-sucht*). It has not yet been admitted into text-books; and only a few observations of it are recorded in medical literature (see Fiedler and Hirschfeld, in Kunze's *Zeitschrift für Praktische Medicin*, 1874).

The history of the disease is brief: it dates from the time when the method of subcutaneous injection by Pravaz's method became popular; and, in spite of the shortness of the time, it has gained a wide and dangerous extension.

Morphiomania arises from the abuse of morphia-injection; and the results of this abuse are disturbances of the whole nervous system. The originators and spreaders of the malady are physicians, who, in cases of more or less painful and long-continued diseases have allowed their patients to inject morphia subcutaneously; and it has been further spread by the patients themselves, who have recognised only the comfort produced by the injection, and not its dangers.

The symptoms of morphiomania are nearly the same of those of dipsomania; the similarity of the two diseases extend even to the delirium. In delirium tremens from alcohol and in delirium tremens from morphia, horrors, trembling, and hallucinations are pathognomonic; in both diseases, inflammatory affections of the lungs, intestinal, etc., run an equally severe course. They differ essentially in these particulars; in morphiomania, mania does not occur as a psychical form of disease; and, contrary to what is observed in dipsomania, the victims are almost exclusively found in the higher and more cultivated classes of society.

To those who frequently use injections of morphia, it becomes indispensable, in order to ward off all psychical and somatic uneasiness; and thus they take to morphia as the tippler to his dram. They deaden their mental worry, their domestic troubles, their social unpleasantnesses; as the alcohol-drinker does with his morning dram, they steady their tottering limbs with morphia; and, when the morphia has been excreted from the body, and the feeling of depression and discomfort, like that of alcoholic seediness, bring before their view their miserable and comfortless position, and the mental and corporeal break-up of their lives, a renewed dose of the poison helps them out of their misery, which is only in part of spontaneous origin. But the intervals in which they can lead an endurable existence without morphia become constantly shorter and shorter; the craving for morphia constantly increases, the vicious circle constantly closes in around them, until they become incapable of resistance and totally broken down.

I will relate to you the histories of three cases, re-

* Read before the Berlin Medical Society. *Berliner Klinische Wochenschrift*, November 27, 1875.

markable both with regard to the large dose and to the long-continued use of morphia.

A married pair, committed to my care by Medical Councillor Dr. Günther of Dresden and Professor Westphal of Berlin, were admitted into the *Maison de Santé* at Schöneberg on July 19, 1875.

The man was aged thirty-eight; he had been an officer, and was of strong build. Ten years ago he had learned the use of morphia in rheumatic pains, and during the last five years had injected daily a gramme (fifteen grains) of acetate of morphia.

His wife suffered for a short time from gallstone colic, for which she used injections of morphia. The war of 1870-71 taught her another indication for its use. She took to morphia to interrupt her sorrow, to make her forget her trouble at the dangers to which the nearest members of her family were exposed. During the last five years she had injected daily eight *decigrammes* (twelve grains) of morphia.

As a result of the condition which had been induced, the male patient had loss of sleep, increased reflex excitability, exalted and perverted sensibility, neuralgia, twitchings of the muscles, and dryness of the tongue. There was no constipation; and the pupil, instead of being contracted, was dilated. His face had a remarkably deep red colour; he perspired on the slightest exertion, often even while at rest, to such an extent that he was obliged to change his linen several times daily. The patient, though intelligent and in many respects well-informed, had no inclination for any business; he was stupid and exhausted, and felt himself ill.

His wife, aged thirty-three, had a grey-lead colour of the face; her pupils were scarcely as large as pin's heads. Menstruation had ceased for four years. She had hyperæsthesia and neuralgia, as well as violent rigors of the tertian type. Her appetite was small; animal food was especially disgusting to her.

Memory and judgment were well preserved in both patients.

I at once entirely cut off the supply of morphia from the male patient. In the case of his wife, I diminished the quantity daily, so that the use of morphia was ceased from altogether from the fourteenth day.

On the first day after the withdrawal, the male patient showed a high degree of irritability, writhed all over if one only felt his pulse, and had rigors and painful attacks of cough. On the second day he was much depressed, and so weak that he had to be carried to the bath, and dressed and undressed. In the evening diarrhœa set in, and continued fourteen days. With the diarrhœa, during the first few days, there were symptoms of congestion in the head and occasional vomiting. The patient behaved like a person in desperation; he craved most urgently for morphia, beat at his window and doors, etc. Doses of three grammes of chloral produced no sleep during the first three nights.

During the next three days the sensibility was still more heightened, and hyperæsthesia of the scalp and giddiness were present. On the last of the days, however, the patient began to eat and to feel more easy.

Four days after the commencement of the treatment, the patient slept without chloral, but with interruptions; during the sleepless hours of night he was excited, and was depressed during the day. At the end of the second week there was a cessation of the psychical and somatic effect of the withdrawal

of the morphia, with the exception of increased sensibility.

The temperature did not undergo any abnormal variations during the treatment. The patient gained about 2250 grammes (nearly 5 lbs.) of weight during the four weeks.

In the female patient the successive reduction of the morphia injected was attended with increase of reflex irritability and a feeling of extreme discomfort and loss of power. She was sleepless, and, when in bed, had a constant sensation of falling out. There were convulsive movements of the limbs, and neuralgia of the genital organs and bladder. She avoided her bed, as, if she lay in it, painful contractions of the arms set in. After the daily dose of morphia had been reduced to 5 centigrammes, moderate diarrhœa appeared and continued eight days; this was accompanied by anxiety, giddiness, palpitation of the heart, and redness of the face.

The patient, an intelligent and well-informed woman, lamented and wept like a child, was excited to a high degree, and incessantly cried for morphia. After three days, the redness of the face disappeared; the patient was very weak on her feet, and complained of pain in the region of the stomach and liver. Ten days after the total withdrawal of the morphia, the catamenia appeared and ran a normal course. After having been under treatment for four weeks, the patient left the institution, happy and cheerful, having gained 2,000 grammes (nearly 4½ lbs.) in weight.

The third patient was a man aged thirty-two, strongly built, of pale yellow complexion, hollow-eyed. The pupils were dilated; there was no constipation; virile power had been lost for half a year. For three years he had injected more than a gramme of morphia daily. On October 9, he entered the *Maison de Santé* in order to be cured of his habit of using morphia, as he had lost sleep and appetite, and was troubled with violent vomiting every morning.

The supply of morphia was at once entirely stopped. Twelve hours afterwards there were depression, weakness, melancholy, and clonic convulsions. The next day he had diarrhœa, which lasted nine days, and severe vomiting, which continued eight days. During the first five days he was quite sleepless, and had illusions and hallucinations of vision.

On the fourth day he had tremblings of the muscles of the face, tongue, and limbs; speech was difficult, and there were convulsive twitchings of the limbs.

On the fifth day, speech became still more difficult; the uneasiness and hallucinations of sight increased during the night and exhausted the patient. His voice was hoarse, tuneless, and hesitating; his aspect was one of depression.

During the fifth night, the patient, while sitting upright in his bed, suddenly fell backward on the pillow; his breathing stopped, and then became difficult and panting. He had the *facies Hippocratica*. After half an hour the pulse and respiration rose; but a high degree of collapse remained. On the sixth day the patient slept half an hour; and on the seventh day, after a bath with affusion, an hour and a half. Up to the eighth day the patient vomited all his food; his appetite then returned and the vomiting ceased. On the ninth day the patient felt somewhat more at ease; he said that he no longer had any desire for morphia, and was only troubled about his sleeplessness.

There was a rise of temperature to 38.5° Cent. (101.3° Fahr.) on the fourth night.

An almost daily examination of the urine in the married pair whose cases are first recorded showed on the first two days after the withdrawal of morphia a turning of the plane of polarisation to the left; on the other hand, Trommer's test, applied during the four weeks of observation, showed in both reduction of the hydrated oxide of copper. In the third case, there was no change in the plane of polarisation; but Trommer's test gave the same result as in the other cases. This reduction could not be due to chloral, as the female patient took it only a few times, and the last patient had none.

The symptoms of morphiomania are so distinctly defined in these cases, that it is not necessary to describe them more specially. It is worthy of notice, that the abuse of morphia produces almost the same pathological phenomena as those for which it is indicated as a remedy. Hyperæsthesia, neuralgia, sleeplessness, anxiety, depression, and irritability, are both overcome and produced by morphia. Further, when morphia is suddenly or gradually withdrawn, there is during the first days a considerable aggravation of the disturbance, especially of the cerebro-spinal and vaso-motor nervous system (feebleness of gait, trembling, various degrees of rigors, deep redness of the face, perspiration of the whole body).

As regards the prognosis of morphiomania, I will show that in a large number of patients I have seen only 25 per cent. of cases of recovery; in most cases there was a relapse. In two cases I have seen the abuse of morphia followed by marasmus and death; two other patients committed suicide. Five were drinkers; among these was the wife of a colleague, who had read in a book on *materia medica*, that alcohol was an antidote to morphia; she used it as a remedy to cure herself of the habit of using morphia, and fell a victim.

The treatment of morphiomania consists principally in the withdrawal of the morphia; and sudden is preferable to gradual withdrawal. The organism bears rough and energetic interference better than that which acts slowly, as we see in surgical and obstetric operations, etc. The treatment of the patients requires personal devotion on the part of the medical man, and is difficult and thankless.

To wean inveterate morphia-cravers from morphia is impossible, unless they be treated as prisoners. While the morphia is withdrawn they must be isolated, and be constantly watched by educated persons inaccessible to all attempts at corruption. Such persons are found with difficulty; for some secretly bring morphia to the patients for the sake of reward, and others cannot resist the pathetic entreaties and severe sufferings of the patients. Windows and doors must be closed against all communication with the outer world. The patient's clothes, the sofas, the cupboards in his room must be repeatedly examined; for it is characteristic of every morphia-craver who comes voluntarily or involuntarily into an institution to be cured of morphiomania, that he brings with him a large dose of morphia, and one or more injection-syringes. The physician must not rely on the promises or the most solemn assurances, or on the word of honour, which the patients willingly give. Morphiomania, like every passion, sets aside the character of the individual; the most educated, the most judicious and intelligent, eschew no means, no trick, to deceive the physician, and to either secure the morphia which they have brought with them or to procure a new supply.

If the physician be energetic, observe his patients

constantly, and have control over the watchers, and if these be honest, the most difficult part of the treatment is overcome in eight days.

After the morphia has been withdrawn twelve hours, collapse usually sets in; the patient should therefore keep his bed, and, during the first eight days, not be deprived of the use of stimulant wines; it is even necessary for women to take large doses of alcoholic liquors at this time. As has been shown in the third case, the collapse may become so severe as to endanger life. The danger is overcome by the subcutaneous injection of liquor ammoniæ anisatus, followed soon by an injection of fifteen milligrammes of morphia.

If, during the first forty-eight hours after the withdrawal of the morphia, the patient do not groan and lament, if he be able to eat during the first days, and if his countenance be animated, he has, in spite of denial, secretly used morphia. The narrowness of the pupils, and the absence of diarrhœa, will soon confirm the impression.

The distress, restlessness, and despair which affect the patients during the first three days, are so severe, that the physician must be deeply penetrated by the task which he has imposed on himself to look calmly on this misery, and to have no ear and no heart for the despair, lamentation, and weeping.

Attempts at suicide on the part of the patients, which their unhappy frame of mind may lead them to make, must be watched against and prevented.

Prolonged baths should be given, both as a remedy for the neuralgia which appears during the time of abstinence, and to promote sleep at night; and, if there be not too great collapse, they should be combined with cold affusions.

Diarrhœa, which in the cases observed by me has almost always set in immediately after the withdrawal of the morphia, is an obstacle to treatment only when it becomes exhausting. The injection into the rectum two or three times a day of one to three litres of water at blood-heat aids in soon assuaging this symptom.

Vomiting, which in some cases appears during the first days of abstinence, and which yields to no remedies, as in general narcotics must be excluded from the treatment, demands that care be taken for the feeding of the patient by the rectum. Leube's nutritive enemata are very useful in these circumstances.

As morphiomania has an affinity with dipsomania, the use of wine and alcoholic liquors should not be prohibited altogether, but should be limited from the time when the patients begin to take regular nourishment. The further treatment must be regulated by the general condition of the patient. Fresh air, good nutritious food, and preparations of iron, will soon again raise the depressed powers.

Beyond all, however, it is necessary, even before the end of the third week of treatment, to provide bodily and especially mental occupation for the patients.

Experience teaches that the internal use or subcutaneous injection of morphia, so long as it is carried out by the physician himself, does not lead to morphiomania; and that this disease was first developed when physicians entrusted the administration to the nurses and attendants of the patient, and prescribed morphia injection. The reason which we often hear assigned for this, that the physician is hindered from making the injection personally, is not valid; he can then content himself with the internal administra-

tion of morphia, as, though the effect is a little slower if it be given *per anum* and on an empty stomach, it relieves pain and produces sleep just as much as when injected subcutaneously. The internal use of morphia is not attended with the very unnecessary feeling of comfort which makes morphia a source of pleasure to patients and stimulates them to its continued use.

I am aware of the great and almost insuperable difficulties which stand in the way of carrying out my requirements; but there is no other means of preventing the further spread of morphiomania.

The suggestions and objections made when I read a paper on the subject at the meeting of naturalists at Gratz, were chiefly the following. On the one hand, no reason was found for entrusting attendants on the sick with the injection of morphia. There may be exceptions: as a rule, one will become convinced of the disadvantages attending the practice. On the other hand, it was suggested that the legislature should be urged to enact a law forbidding apothecaries and druggists, under pain of severe punishment, to sell morphia to unauthorised persons. Such a law is already in existence; and yet a great number of apothecaries sell morphia to anyone who asks for it. Again, it is often impossible to make the apothecaries answerable, as they themselves are deceived by false prescriptions.

The last proposal, which was approved of, and which certainly can have no happy results, was, that in each case the physician should inform against the apothecary. But the function of an informer does not suit everyone's taste. With regard to the danger which threatens society through the spread of the malady, it was regarded as a duty of every physician to make subcutaneous injections of morphia personally. The much-occupied practitioner must limit himself to the internal use of morphia if he cannot carry out this requirement.

In the hands of the physician, the method of subcutaneous injection is a blessing to mankind; in the hands of the laity, it is a curse.

I conclude, gentlemen, with entreating you to direct your attention to this new form of disease. If you use your influence by word and writing, then, but only then, will its further development be arrested.

ON OBLITERATIVE ARTERITIS. BY DR. CARL FRIEDLÄNDER, PRIVATDOCENT AND ASSISTANT IN THE PATHOLOGICAL INSTITUTE AT STRASBURG.*

In the following lines I propose to direct attention to an extremely wide-spread affection of the arterial system, which hitherto has remained almost unknown.

1. I refer to the development of a connective tissue, very rich in cells within the inner coat of the middle and smaller arteries, which leads to a narrowing of the lumen, and at last to complete filling of the lumen with firm material, and obliteration.

2. The affection begins in the acute stage with a proliferation of small thickly crowded round cells, between the inner elastic lamella and the epithelioid lining. The cells afterwards increase in size, a larger or smaller quantity of intercellular substance

appears, the tissue acquires the character of granulation-tissue, or even of mucous tissue (there being, however, no mucin reaction); new vessels are also observed, often even small arteries, proved beyond doubt to be such by the presence of circular muscular fibres.

3. The proliferation either takes place at all points of the periphery simultaneously, so that a gradual concentric constriction of the lumen is produced, or with greater intensity on one side than on another. In the latter case, a transverse section has the form of a meniscus. The lumen is then narrowed on one side, and has an excentric, often quite peripheral, position.

4. The character of granulation-tissue is either retained by the proliferated layer for a long time, or it passes into a firm and, in some circumstances, perfectly sclerotic connective tissue, such as is found in firm fibromata. And this takes place everywhere when processes of sclerosis and induration go on around the artery; thus it especially occurs in callosities and warts, in the indurated edges of ulcers, in chronic metritis, etc. As the contraction advances, the wall of the vessel is thrown into folds. The muscular structure of the wall of the vessel is in the latter cases often entirely replaced by connective tissue, so that the limits of the artery are only distinctly indicated by the elastic layers, especially that of the inner coat. In other cases, the whole of the arterial coats become converted into a peculiar homogeneous slightly glistening substance, in which even the elastic layers disappear. The homogeneous substance contains only few or no cell-elements, and resists the action of acids, etc. I have also observed moderate caseation of the arteritic proliferation in arteries, the walls of which contained cheesy abscesses. On the other hand, fatty or cutaneous degeneration of the elements occurs quite exceptionally, if at all.

5. It may be laid down as a general law, that the wandering elements of the arteries also, on their part, take a considerable part in the great group of interstitial processes. According as acute inflammation (collective of small round cells), or formation of granulation tissue (in chronic inflammation), or induration, or caseation, takes place in the interstitial tissue supporting the vessels, the corresponding processes take place in the arterial wall itself, especially in the inner coat.

6. On the other hand, obliterative arteritis only rarely occurs as a primary affection. The 'syphilitic disease of the cerebral arteries,' expressly described by Heubner in his well-known monograph (which is a typical obliterative arteritis, presenting throughout no anatomical characters specifically indicative of syphilis, and being etiologically also in no wise limited to syphilis), occurs, indeed, in some cases apparently as a primary disease; while in other cases, in fact the majority, it occurs altogether as a result of meningitis or new growths. The consequences of this affection have been so carefully and completely studied by Heubner, that I have nothing to add to his description. [See page 50.]

7. As primary arterial processes we have to consider those which are observed in the normal closure of arteries; e.g., in the closure of the ductus Botalli and of the umbilical arteries. This obliteration does not at all take place through thrombosis, as is often incorrectly taught, but essentially through proliferation of the arterial walls, as has already been determined by previous researches, and espe-

* *Centralblatt für die medicinischen Wissenschaften*. January 22.

cially by the proliferation of the inner coat. We thus have a well marked 'physiological type' for the affection under consideration.

8. While obliterative endarteritis plays a more or less prominent part in the interstitial inflammatory processes of most other organs, its occurrence in the conditions affecting the lungs is of quite exceptional importance. Not only does it occur regularly, and in a very high degree, in the so-called indurative processes, in cicatricial bronchiectasis, etc., but it is a very important link in the chain of previous changes which lie at the foundation of pulmonary phthisis. It is almost impossible to closely examine a case of pulmonary phthisis without being struck with the large number of vessels that are in this way nearly or quite shut off from the circulation. And this remark refers not only to parts lying near ulcerated surfaces and centres, in which arteries changed into solid cords have long been observed (those not being, as is usually supposed, the consequence of thrombosis, but only a result of obliterative arteritis without any preceding thrombosis); but the endarteritic proliferation is very frequently, almost constantly, found in recent lobar and lobular inflammations, which, at a later period, lead to phthisical conditions. In these inflammations, as Buhl has shown, there is always found at a very early stage proliferation of the interstitial tissue of the lungs.

9. In the diseases analogous to phthisis, artificially produced in animals (such as pulmonary affection in rabbits after section of the inferior laryngeal nerves), the diseases of the arteries appears within the first few days (it may be at the end of forty hours); and the process may here be very well followed from its first beginning.

10. In these conditions, the idea impresses itself on the mind that the arterial proliferation must, through the ischaemia produced by it in the affected parts, have an essential share in the malignant course of the processes referred to. That this proliferation must stand in the most direct relation to the increase of pressure in the pulmonary arterial system, and to the dilatation and hypertrophy of the right heart frequently occurring in phthisis, and their results, is self-evident.

11. It further deserves to be pointed out that, both in the interior of tumours of various kinds and in the parts around them, obliterative arteritis is very regularly found. It occurs in simple granulation growths, in gummatous tumours, very frequently in tuberculosis with commencing chronic inflammatory or ulcerative processes, and more rarely in sarcomata. On the other hand, it is regularly to be observed in fibromata, and in the highest degree in elephantiasis, in which it often presents very distinct naked-eye evidence. In cancers also it occurs to a great extent where the elements of connective tissue are strongly developed; thus it is especially found in scirrhus.

12. As regards the origin of the cells, of which the proliferation in the inner coat consists in the first stages, it is clear that they have a triple source. *a.* From the epithelioid lining (for in the smaller arteries at least there are no other cell-elements in the inner coat); it must be assumed that the epithelioid cells have produced a new brood, while they themselves have remained in complete integrity as a continuous layer. (I have many times observed division of nuclei in the epithelioid cells, that is, multinucleated forms, even giant-cells themselves.)

b. Elements from the arterial blood may become insinuated between the epithelioid cells. *c.* Migratory cells may be furnished from the vasa vasorum in the membrana adventitia. Probably all these three modes come into action; from analogy, the third-named must in any case play an essential part. This is supported by direct observation, which I will not here describe more particularly. I will only remark that in all cases where proliferation is found in the inner coat, accumulation of cells is present in the adventitia.

13. Obliterative endarteritis shows in its whole course the most complete agreement with the processes which take place in the organisation of thrombi. An organised thrombus, or, to speak more correctly, the tissue which is found after some weeks in the place where a thrombus has been, may have the closest resemblance to a vessel closed by obliterative endarteritis or endophlebitis. The earlier thrombus is generally recognised by the remains of pigment; but if we put aside this unessential circumstance, or look at cases in which the pigment is absent from the first, as in white thrombi (Zahn) it is only in respect to the very first commencement that an essential difference between the two processes can be proved. The hypothesis may then be advanced, that the organisation of thrombi takes place by a process analogous to obliterative arteritis or phlebitis. Very instructive in this respect are the conditions of the arteries and veins in the placental portion of the uterus after labour. Immediately after birth, one part is found almost empty and collapsed; another part is filled with fluid blood; and a third with coagulated blood and thrombotic material. In all these three cases the process of obliteration or organisation, so far as can be seen, takes place in all essential points in a perfectly identical manner.

14. Finally, I have to remark, that in veins also, in interstitial inflammations, nearly similar obliterative processes are often enough to be observed, though not with the same regularity as in arteries. The determination of the condition is often more difficult in veins than in arteries, since the inner coat of veins, in consequence of the less development of its elastic elements, appears much less distinctly defined than that of arteries. Moreover, thrombosis occurs as a complication much more frequently in veins.

15. On the other hand, it is interesting to observe that a similar obliterative process, by means of new formation of connective tissue, occurs also in the interior of membranes bearing epithelium, and is generally preceded by destruction of the epithelial cells. The conditions are apparently interstitial proliferation processes in the neighbouring parts. This is not unfrequently observed in the smaller bronchial tubes in cases of chronic indurative pneumonia; also in the secretory ducts of glands, as in the lactiferous tubes in cases of scirrhus of the breast, and also in simple fibromatous and chronic inflammatory conditions of the mamma.

I hope to make a further communication on this subject in the course of next month.

ANATOMY AND PHYSIOLOGY.

BROWN-SÉQUARD ON CAUTERISATION OF THE CEREBRAL LOBES IN THE GUINEA-PIG.—Brown-Séquard (*Progrès Médical*, 1875, no. 16) observed

after deep cauterisation of one side of the brain a peculiar spread out position of the tips of the toes, but no paralysis of the limbs of the corresponding side. He refers this to a disturbance of the 'muscular sense' of the corresponding side. The injury to the brain, which produced paralytic phenomena of the corresponding (not of the opposite) half of the body, influences, according to the author, remote parts of the brain, upon which the normal functions of the affected extremity depend. The establishment of this hypothesis is wanting.

NESTEROFFSKY ON THE NERVES OF THE LIVER. M. Nesteroffsky (*Virchow's Archiv*, Band lxiii. p. 412) by the gold method and the subsequent addition of ammonium sulphide, succeeded in demonstrating the nerves in fresh sections of frozen injected liver. The nerves of the liver end in the form of networks, which surround the blood-capillaries; and the terminations of the nerves have no connection with the liver-cells.

ARNOLD ON THE CONDITION OF THE WALLS OF THE BLOOD-VESSELS DURING EMIGRATION OF THE COLOURLESS BLOOD-CORPUSCLES.—J. Arnold (*Virchow's Archiv*, Band lxii. p. 487, and *Centralblatt für die Medicin. Wissenschaften*, no. 49), injected a weak solution of silver into the blood-vessels of frogs, in which single parts of the body had been inflamed twenty-four hours previously. The appearances of the so-called endothelial figures varied considerably from the normal. The 'cement-lines' appeared as broad, strong, zig-zag lines, or were only indicated by rows of granules.

There are large dark points in them, the stigmata; and in the cement-substance as well as in the stigmata are to be found white corpuscles in the act of passing out of the vessels, and this in various stages of their passage. Not unfrequently several colourless corpuscles are to be seen attached to one part of the cement substance, or to one of the stigmata; thus, two corpuscles may be lying within the vessel, and fixed by short processes in a stigma, whilst a third one for the most part has penetrated and only remains in connection with the vessel by means of a short process. Sometimes the accumulation of the white corpuscles on the outer side of the vessel, in the neighbourhood of the stigmata, is so considerable, that the sheath of the vessel, at the corresponding spot, stands out like a little hump from the epithelial layer. From this the author concludes, that the white blood-corpuscles in inflammation pass through the wall at the cement-substance, *i.e.* the stigmata; whilst, on the contrary, he never saw that other parts of the wall of the vessel, *e.g.* the epithelium, was permeable to the white blood-corpuscles. (See L. Purves, whose experiments were made in Donders's Laboratory in Utrecht in 1873, *LONDON MEDICAL RECORD*, vol. iii. p. 37.)

From experiments made with gelatine and fine vermilion injections, it seems that, in addition to the pronounced wandering out of colourless blood-corpuscles connected with disturbances in the circulation, other corpuscles also pass through the wall of the vessel; and apparently this also happens at the portion of the stigmata and cement-substance. When blue-coloured gelatine instead of the vermilion was employed, the inflamed vessels at numerous spots here seemed to be covered with small roundish blue protuberances, or with more elongated blue pro-

cesses. From this it results, that the wall of the vessel permits not only substances in solution to pass through it at the position of the stigmata and cement substance, but also a colloid body (gelatine), and other elements (vermilion.) The masses which have passed through the vascular walls, penetrate in the direction of the 'juice-canals' ('*Saftcanalsystem*') in the tissue, and under certain circumstances these can be completely filled laterally with the injection mass. Still the configuration of this system of spaces when injected is variable, according to the disturbances of the circulation which have occurred in the tissues. Whilst the juice-canals during venous stasis possess a broad and ampullated form, they appear smaller and more zig-zag in those disturbances of the circulation which are specially characterised by the exit of white blood-corpuscles.

BERT ON THE QUANTITY OF OXYGEN ABSORBED BY THE BLOOD AT DIFFERENT BAROMETRIC PRESSURES.—According to P. Bert (*Comptes Rendus*, tome lxxx. 733, *Centralblatt für die Medicinischen Wissenschaften*, no. 55, 1875), hæmoglobin forms with oxygen a chemical compound, which can be obtained by shaking blood with atmospheric air. Increase of pressure is without influence on this combination. More oxygen is taken up, but only corresponding to the absorption of this gas by the fluid, following Dalton's law. A diminution of the pressure to one-eighth of an atmosphere, at a temperature of 60° Fahr. has very little influence on the oxyhæmoglobin; from this limit onwards, however, it rapidly decomposes. The decomposition occurs earlier at a temperature of 104° Fahr. This is a cause of the poverty of oxygen in the blood of animals, which are subjected to an increasing diminution of pressure; a second cause is, that the contact of the blood with the air in the lungs is not sufficiently intimate to influence the degree of saturation with oxygen corresponding to the pressure and temperature. For this reason, the quantity of oxygen in the blood in experiments on animals is always smaller than in experiments outside the body.

PLÓSZ AND GYÖRGYAI ON PEPTONES AND FEEDING WITH THE SAME.—P. Plósz and A. Györgyai (*Pflüger's Archiv*, Band x. p. 536; *Centralblatt für die Medicinischen Wissenschaften*, no. 55, 1875) have performed a new experiment on the nutritive value of peptones, on an adult dog which had fasted for several days. They fed it with solution of peptones and the necessary nutriment free from nitrogen, estimated the quantity of nitrogen in the total excreta of the animal, and compared it with the known quantity of nitrogen in the food. During the whole experiment there was, nitrogen taken in, 14,451 grammes; nitrogen excreted, 13,463 grammes; 0,988 grammes were therefore retained in the body (under the assumption that the quantity of nitrogen can be accurately measured under these circumstances!). The body-weight rose from 2,531 grammes to 2,790, *i.e.* 259 grammes. Corresponding to the nitrogen deficit in the excreta, one can assume that during the feeding with peptones an addition of albumen had taken place, that the peptones can certainly be changed into albumen and employed for the building up of cells.

Another question of course arises, How far can peptones introduced into the body be followed as such? For the solution of this question, the authors injected 20 to 30 grammes of a watery solution

of peptones into the stomach of dogs which had fasted for forty-eight hours, and then killed them after two or four hours. As a test for peptones they employed the reaction of caustic potash and sulphate of copper (purple-violet solution) or boiling with Millon's reagent and nitric acid (yellow colouration). The greatest quantity of peptone by this process was found in the blood of the mesenteric veins and in the extract of the mesentery. The liver contained much less; indistinct traces were found in the blood of the hepatic vein and blood of the carotid artery. On injecting peptones into the veins, a part appeared unchanged in the urine, the larger part remaining in the body, and undergoing further changes. In the blood of the carotid, after three hours, a small quantity of peptone was still traceable. Lastly, the authors conducted blood, to which peptones had been added, in an artificial circulation through the amputated hind quarters and extremities of a large dog just killed (excluding the glands). The circulation lasted four or five hours. Here also the blood lost part of its peptones; in one case twenty grammes of peptones disappeared from the blood. After finishing, the blood was washed out of the vessels with a solution of common salt, and a watery extract of this as well as of the tissue was then made. Neither peptone, nor any other nitrogenous body which one might expect as a derivative of the albumen, was present.

W. STIRLING, D.Sc., M.D.

LÉPINE ON THE MOTOR CENTRES OF THE ENCEPHALON.—Lépine (*Gazette Médicale de Paris*, no. 25, 1875) with Rochefontaine and Tridon, has made experiments upon the influence of stimulation of distinct parts of the brain on the blood-pressure, heart, and secretion. Stimulation of the post-frontal convolution of a curarised dog with very weak induction shocks, produced a pronounced increase of the blood-pressure in the crural artery (seven centimètres of mercury). A certain time elapses before the increase of pressure occurs. The same result can be produced by stimulation of the prefrontal convolution and the corresponding part of the sulcus. If the point of the surface of the brain, which in a non-curarised animal discharges movements of the opposite feet, be stimulated with very weak currents, the temperature of this foot rises several tenths of a degree. The temperature of the foot of the opposite side rises, but not so high, whilst that of the rectum remains unchanged. The vessels of the brain and pia mater dilate and bleed more, but whether in consequence of the vaso-dilator influence of the stimulation on the cerebral vessels, or in consequence of the increased blood-pressure, is uncertain. No such result is observed after stimulation of the surface of the posterior lobes or of the dura mater. Stimulation of the spots which caused increase of the blood-pressure accelerated at the same time the heart-beats. With intact vagi and very strong current, there is a reduction of the number of heart-beats. Stimulation of points, whose locality is not defined, increases the secretion of saliva.

OTT ON THE ACTION OF LOBELINA.—In the *Philadelphia Medical Times* for December 11, 1875, Dr. Isaac Ott describes a series of experiments made by him with lobelina, and arrives at the following conclusions.

1. Lobelina, like nicotina and conia, paralyses the motor nerves.

2. Lobelina does not destroy the functions of the sensory nerves or the striated muscles.

3. Lobelina, nicotina, and conia depress the excitability of the spinal cord.

4. Lobelina destroys voluntary movement and co-ordinating power.

5. It temporarily decreases the pulse, followed by a subsequent increase, often beyond normal. Nicotina does the same. Lautenbach states that conia increase the heart-beat.

6. This action on the pulse is due to an action on the cardio-motor ganglia, provided that atropin paralyses the cardio-inhibitory ganglia.

7. Lobelina, nicotina, and conia temporarily decrease the pressure, followed by a rise much beyond normal.

8. This increase of pressure is due either to a peripheral vaso-motor action, or to an excitation of the spinal vaso-motor centres.

9. Lobelina, nicotina, and conia paralyse the pneumogastriacs.

10. In large doses it paralyses the vaso-motor centre, both to direct and indirect irritation.

11. Lobelina, nicotina, and conia accelerate the respiratory movements.

12. After section of the vagi, lobelina and conia cause no increase of respiratory movements.

13. Lobelina increases and then decreases the temperature; nicotina and conia decrease the temperature.

SCHMIDT ON THE INVESTIGATION OF BLOOD-SERUM, WHITE OF EGG, AND MILK BY DIALYSIS THROUGH GELATINISED PAPER.—Alex. Schmidt (*Pflüger's Arch.*, vol. xi., and *Centralblatt für die Medicinischen Wissenschaften*, no. 1, 1876) announces that the so-called English parchment-paper employed by him is not parchment-paper at all, but only a kind of ordinary writing-paper very carefully prepared with alum and gelatine. Of the paper 100 grammes yield to boiling water a mean value of 4.11 grammes of gelatine, 0.64 gramme of potash-alum, and 0.79 of other soluble salts. The quantities of gelatine and alum which at ordinary temperatures pass into the alkaline solution of albumen or into the diffusate are very small, so that this impurity need not be taken into consideration. The author prefers De la Rue's paper purified by extraction with dilute hydrochloric acid and water, and then covered with a thin coating of gelatine. Steeping for a short time in a one per cent. solution of gelatine is sufficient for this. The author then gives the method he employs for estimating the albumen in blood-serum, etc. The blood-serum is neutralised, coagulated with ten times its volume of alcohol, allowed to stand for twenty-four hours, then boiled, filtered, the coagulum washed with a mixture of ten parts of alcohol and one part of water, then with absolute alcohol, and lastly with ether. The soluble salts contained in the fluid remain in solution, the coagulated albumen only contains the insoluble earthy phosphates. On employing gelatinised paper, the quantity of albumen which passes through the paper is not inconsiderable; if the dialysis is continued for two or three days, and the water changed very often, then the greater part of the albumen passes through. The author considers 1, blood-serum and egg-albumen; 2, milk.

1. *Serum and Albumen*.—If diluted serum or solutions of egg-albumen be dialysed, there first occurs a stage at which the solution no longer coagulates on being boiled; it has an alkaline reaction, and still contains traces of salts. As the dialysis proceeds the reaction becomes neutral, the solution of

albumen is free from soluble salts, and, on burning, leaves only earthy phosphates. If an acidulated solution be subjected to dialysis, it still remains for a time capable of coagulating, even when all salts have been removed from it, and continues so until the last trace of acid has passed out. The quantity of earthy phosphates contained in the albumen continually diminishes with the duration of the dialysis, and not only absolutely, but also relatively to the quantity of albumen—to 0.194 per cent. of albumen. The soluble condition of the albumen therefore depends neither upon the quantity of alkali nor on that of the earthy phosphates. *Albumen is rather a substance soluble by itself in water.* The earthy phosphates pass into the diffusate in combination with a nitrogenous organic body, and remain in solution after the removal of the albumen which has passed into the diffusate.

2. *Milk.*—The former observations of the author upon this subject are here mentioned, that acidity of the milk diffusate also takes place even when paper free from alum is employed, so that it does not depend upon the presence of this substance, but is altogether absent in some cases. A certain part of the diffusate does not undergo the acid reaction; if, after the removal of all soluble salts and the milk sugar, the diffusate now resulting is separately collected, a fluid is obtained which, in addition to earthy phosphates, contains only certain organic substances, and shows no tendency to become acid. Like the albumen, a part of the casein also passes through the paper. Milk purified by dialysis conducts itself very peculiarly with regard to rennet. At first the capability of the milk for coagulating is increased by the rennet—i.e., the coagulation occurs at a lower temperature, and the cause of this phenomenon is the removal of the alkaline salts, which prevent the coagulation; on continuing the dialysis, however, the milk becomes quite incapable of being coagulated by rennet, therefore by the process of dialysis *some substance must have passed out*, which determined the *coagulation by rennet*. This property of being coagulated by rennet, can be again restored through the addition of the diffusate of milk, nevertheless only the diffusate obtained from milk which has become acid during the dialysis acts in this way, acidity of the diffusate arising spontaneously does not suffice.

In conclusion the author rejects the view of Heynsius, who ascribed the absence of coagulability in the solutions of albumen employed by Schmidt to the presence of alkalis (LONDON MEDICAL RECORD, October 15, 1875.) Schmidt asserts that Heynsius had no solutions quite free from salts, and that completely neutral solutions of albumen when quite free from salts do not coagulate either upon heating or on adding alcohol.

HEIDENHAIN ON THE PANCREAS.—R. Heidenhain (*Pflüger's Arch.*, vol. x., and *Centralblatt für die Medicinischen Wissenschaften*, no. 2, 1876) observed the following appearances were successively presented by the cells of the pancreas at the different stages of digestion.

1. During hunger the granular inner zone occupies the larger, the homogeneous outer zone the smaller part of the cells. 2. In the first period of digestion, during which a plentiful secretion occurs, there is diminution of the entire cells by using up of the granular inner zone, then addition of new materials to the outer zone, so that this becomes enlarged.

3. In the second period of digestion, during which the secretion diminishes and comes to a standstill, there is a new formation of the granular inner zone at the expense of the homogeneous outer zone, most pronounced diminution of the latter, increase of all the cells. 4. With long-continued hunger there are gradual increase of the latter to their original dimensions, and therewith slight diminution of the inner zone. During the state of physiological activity there is a continual change in the cells—metamorphosis internally, addition of matters externally. Internally there is conversion of the granules into secretory constituents, externally employment of the nutrient materials for the formation of the homogeneous substance, which again becomes converted into granular masses. The average appearance of the cells depends upon the relative rapidity with which this process occurs. In the first period of change there is a more rapid consumption internally and more rapid addition externally; in the second period, the most rapid changes occur at the limit between the outer and inner zones, in that the substance of the former becomes converted into that of the latter. During the condition of hunger the consumption is at a minimum, the addition takes place also slower, but it is still obvious in the apparent increase of the outer zone, which had almost disappeared. Corresponding to these histological changes, the chemical and experimental results of the author showed that pancreatin ready prepared (albumen-ferment of the pancreas), does not exist in the living gland-cells but only its peculiar mother-substance, and under certain circumstances pancreatin becomes free. This mother-substance, which Heidenhain calls 'zymogen,' is probably a compound of pancreatin with an albuminate. With plentiful secretion from the gland, the quantity of zymogen diminishes, to be again generated during rest of the organ. This process of regeneration does not occur sufficiently in a gland with permanent fistula, as soon as the secretion has become continuous.

Further, it is shown that the secretion of water by the gland can be influenced by the medulla oblongata; and, from the author's experiments, it is extremely probable that the excretion of the solid constituents of the gland-cells and that of water do not go hand in hand, but that each seems to be under the direct influence of the nervous system. The formation of pancreatin is connected with the complicated decompositions in the secreting cells, the development of a free acid playing a part in the process.

HERMANN AND STEEGER ON HÆMOGLOBIN.—L. Hermann and Th. Steeger (*Pflüger's Arch.*, vol. x.) contribute a paper on this subject. From the observations of Lothar Meyer, Pflüger, and Zuntz, we know that by adding an acid to blood only the smallest part of the oxygen of the hæmoglobin can be obtained by a vacuum. The cause of this phenomenon is to be sought for in the decomposition of the hæmoglobin, the oxygen being held fast by a decomposition product. For this purpose arterial blood was passed into a flask with warm water (176° to 194° F.) which was connected with the vacuum. About one-third of its oxygen was obtained by pumping. It was now necessary to see whether oxygen alone showed this property of combining with the decomposition products, or whether other gases, which also form compounds with hæmoglobin showed the same property. For deciding his ques-

tion blood saturated with carbonic oxide, and in another experiment with nitrous oxide, was conducted into the same flask. From the former only 1·7 to 1·8 vols. per cent. of carbonic oxide was obtained; from the latter, 4·9 vols. per cent. nitrous oxide and oxygen. These gases are also fixed by the decomposition products resulting from the rapid decomposition of hæmoglobin.

WM. STIRLING, D.Sc., M.D.

RECENT PAPERS.

- The New Sphygmograph; or, Instrument adapted as a Sphygmograph, Sphygmometer, Cardiograph, Cardiometer, and other uses. By Dr. A. T. Keyt. (*New York Medical Journal*, January, 1876.)
- Course of the Nerve-cords connecting the Brain with the Spinal Marrow. By MM. C. Sappey and M. Duval. (*Gazette des Hôpitaux*, January 25, 1876.)
- Researches with the Thermometer, on the Temperatures influenced by the different Periods of Anæsthesia produced by Chloroform. By M. E. Simonin. (*Révue Médicale de l'Est*, January 1, 1876.)
- Experimental Investigations into the Formation of Saccharine Matter in Animals. By M. Claude Bernard. (*Gazette des Hôpitaux*, January 22 and 25, 1876.)
- On Glandular Leucocytosis. By M. Colin. (*Gazette Hebdomadaire de Médecine*, January 28, 1876.)

PATHOLOGY.

SCOTTINI ON BRACHIAL NEURALGIA PRODUCED BY A LATENT SARCOMA.—In the *Annali Universali di Medicina e Chirurgia* for July and August 1875, Dr. Scottini relates an interesting case which came under his notice in the hospital of Pavia.

A woman, aged forty-one, was admitted on February 7. Seven years previously she had pains in the pelvis and metrorrhagia, and the presence of a small uterine tumour was detected, which went on increasing in size. The reason of her entering the hospital on this occasion, however, was the existence of a constant painful feeling of weight in the left shoulder, passing down to the elbow and wrist. Nothing abnormal could be detected to account for the pain; her general condition was good. The disorder was considered to be rheumatic neuralgia, and was treated accordingly, with little or no relief; while the limb became gradually atrophied. It was then suspected that there was some grave alteration in the course of the brachial plexus or at its origin. On March 25 the patient began to have a sense of weight in the right upper and left lower limbs, and could not move them perfectly; then the right lower limb was attacked. On March 30 the feeling of weight, with formication, spread over the whole body; and on the 31st she died.

At the necropsy a small red tumour, as large as a hemp-seed, was found lying in a niche in the grey matter of the posterior part of the right cerebral hemisphere, at the level of the centrum ovale of Viussens. Under the microscope it was found to consist principally of giant-cells with abundant nuclei, along with large yellowish granular cells, and some relatively smaller cells with large nuclei, some round, some elongated; and there were also five nuclei, drops of fat, fibrils of connective tissue, and fusiform cells. In the posterior nucleus in the grey matter of the cervical portion of the spinal cord lay a tumour of the size of a filbert, nearly similar in structure to that already described. There was

adenoma of the thyroid body; and the lower lobe of the left lung contained some nodules consisting of numerous epithelial cells, large angular or elongated cells with large nuclei, spindle-cells, and many nuclei. At the apex of the chest on the left side was a tumour of the size of a small orange, whitish on the surface, and having red streaks of blood-vessels; it was formed of many round lobules, and was of fleshy consistence. It extended from the clavicle to the third rib, and pressed on the brachial plexus and the apex of the lung. It consisted of very large round cells, of giant-cells with abundant nuclei of various forms and sizes, of large and small free nuclei, and of some fatty granules. The uterine tumour was in one part partly softer than elsewhere; and the softened portion presented a structure similar to that of the thoracic tumour. The aorta and the iliac and femoral arteries contained coagula, in which were yellow spots consisting of giant-cells, very rich in small nuclei.

In commenting on this case, Dr. Scottini remarks that the uterine tumour was during the patient's life diagnosed as a fibroma, and that there was no sign of its having undergone malignant change. There was no indication during life of the small tumours in the brain and spinal cord. He believes that these were of recent growth; that the tumour in the chest was of much older origin; and that the changes which the uterine tumour had undergone did not commence until a still more advanced stage of the patient's illness.

MASCHKA ON A CASE OF APPARENT HYDROPHOBIA DEPENDENT ON CYSTICERCUS IN THE BRAIN.—In a paper quoted in the *Gazzetta delle Cliniche* for November 2, Dr. Maschka of Prague relates the following case.

A woman, aged fifty-two, was bitten by a dog on the upper lip and forehead. It was not known whether the dog was mad or not. Nine months later, on February 28, 1875, she was admitted into hospital. For three days she had been unable to swallow, and refused food; attempts at deglutition brought on spasmodic attacks. She did not reply to questions; sat with the head bent forward and the eyes half closed, and with a stupid expression of countenance. White clammy saliva escaped from her mouth; the angle of the mouth was frequently drawn downwards, and the head thrown a little backwards. Blowing suddenly in her face produced violent hiccough; the eyelids opened, and the saliva became more copious; the patient, however, could not eject it, but it flowed over the lip. Her voice became inarticulate, and respiration was interrupted.

She lay in bed in a stupid apathetic state. Attempts to make her show her tongue, at once brought on singultus; and if a few drops of liquid were put in her mouth they were rejected along with a large quantity of saliva. The hiccough and increased discharge of saliva sometimes occurred simultaneously, her face at the time having an expression of terror. The pulse was 140; the heart-sounds were normal. Attempts at percussion brought on paroxysms. The pupils were dilated, and were strongly affected by light. The patient died on the day after her admission, and after death the following appearances were observed.

There were no signs of external injury. There was a good deal of blood and serum in the tissues and ventricles of the brain. At the base of the brain, immediately in front of the optic commissure, was

a fluctuating pear-shaped tumour of the size of a filbert, passing for several lines into the right Sylvian fissure. The vesicle had produced a deep impression on the surface of the brain, the substance of which at this part was distinctly reddened and superficially softened. Microscopic examination of the vesicle revealed the existence of a cysticercus.

Dr. Maschka believes that the symptoms observed in this case can be explained by the rapid growth and movements of the cysticercus. [The fact of the patient having been bitten by a dog, however, somewhat complicates the diagnosis.]

A. HENRY, M.D.

WULCKOW ON CANCER OF THE NAVEL.—Dr. Wulckow, of Pirna, reports the following case in no. 39 of the *Berliner Klinische Wochenschrift* (September 27, 1875) because, as he justly remarks, these cases are comparatively rare. Dr. Ernst Kupfer has collected all the cases he can find, amounting to eight, and published them in Langenbeck's *Archiv für Klinische Chirurgie* (Band xvi. Heft i. page 234). The following case is remarkable for occurring simultaneously with one in the stomach.

The patient, a tailor, aged thirty-three, stated that on a dark autumn night in 1872 he suddenly received a violent blow in the stomach; and found, on recovering his senses, that he was hanging over a brick pillar about three feet high. He retired to bed as soon as he could hobble home; but felt severe pains in the injured part for some days. He did not consult a medical man till the spring of 1873. He was then treated for indigestion and gastric catarrh, and ordered to drink saline waters. In the autumn of that year he had a relapse; and again suffered from indigestion, pain in the gastric region, hiccup, and rarely vomiting. About this time his navel 'inflamed,' but painlessly at first. On December 5 his condition was noted as 'strikingly meagre, skin yellowish-white, soft, and flabby. There was slight yellowness of the conjunctivæ. The liver was much enlarged, almost reaching the navel below, and extending far into the left hypochondrium. Within these limits of percussion-dulness were three hard rough bands; the lowermost reached the navel, the highest the pit of the stomach. During inspiration these bands were so movable, that they slipped from the hand which covered them and sank in deeper. On firm pressure, the patient complained of much pain. Cancer of the liver, probably secondary to that of the stomach, was diagnosed. The navel itself slightly overlapped the surrounding skin; it was reddened, and its edges had rough excrescences, which were moist and devoid of epithelium, apparently from friction of a trouser-button. The size of the new growth was about equal to a medium-sized plum, its horizontal diameter being somewhat greater than its vertical. The surrounding skin was puckered and adherent to the new growth by several distinct masses. There was also some infiltration and reddening of the skin just round the navel. By means of the ulnar border of the hand, the whole of the new mass could be separated from the intestines, and it was then pretty certain that it was continuous with the suspensory ligament of the liver. Scrapings of the growth led to the conclusion that it was carcinomatous. Friedreich published the case in no. 1 of the *Berliner Klinische Wochenschrift* for this year, and then the patient was put on decoction of condurango—ob-

tained from Gehre, in Dresden. On March 8, 1874, he died from a rapid succession of severe attacks of hæmatemesis. During the illness great benefits were derived from a suggestion of Dr. W. O. Leube, viz., the use of minced pancreas and meat per rectum—the constant vomiting precluding much feeding in the ordinary way. At the *post mortem* examination, Dr. Felgner found œdema of the lungs and emphysema, fatty kidneys, and extreme anæmia of all the organs. The stomach and intestines were filled with large clots of blood. In the former, near the pylorus, there was a soft new growth, already breaking down, with the microscopic characters of myeloid tissue (*Markschwamm*). The parts contiguous to the stomach were thickened and pigmented, as were the lesser omentum, and the walls of the gall-bladder. This condition was most marked between the greater curvature and the colon. The firm bands felt in life were thickenings of the peritoneum, doubtless from chronic inflammation. The greatly enlarged liver, which was almost bloodless, exhibited only fatty changes. The growth at the navel gave the characteristic giant-cells of an alveolar carcinoma. On a vertical section it resembled the navel transformed, or a bullet with a flattened surface. Its site, as regards the tissues, was the layer of new-formed cells in the subcutaneous areolar tissue; the epidermis and rete Malpighii were quite free from it. It was not possible to prove an extension of the growth to the suspensory ligament of the liver. The co-existence and simultaneous occurrence of two separate malignant growths in different tissues, both apparently due to the same accident, is worthy of note. Admirers of condurango may not unreasonably explain its failure in this case, by the fact that it was not employed until the disease had advanced too far to allow of any hope of cure.

W. BATHURST WOODMAN.

RECENT PAPERS.

Notes of Three Cases of Congenital Obstruction of Gland Ducts. By Dr. Robert Bell. (*Glasgow Medical Journal*, January, 1876.)

Study on the Transmission of Sounds through different kinds of Endopleuritic Liquids. By Dr. Baccelli. (*L'Union Médicale*, January 20, 1876.)

Note on a Paretic Condition developed in the Limbs of the Side corresponding to Empyema. By Dr. Lepine. (*L'Union Médicale*, February 3.)

MEDICINE.

WOOD ON PARAPLEGIA.—The eleventh of the series of 'Clinical Lectures by American Physicians,' edited by Dr. Seguin, is by Dr. H. C. Wood, jun., On the Diagnosis of Diseases, accompanied with real or apparent Paraplegia without marked muscular degeneration.

After warning students and others against the pseudo-paraplegia due to inflamed joints, injuries, etc., the author first speaks of cerebral paraplegia, due to disease on both sides of the brain, as exceedingly rare. He then divides the spinal cord into three pathological regions; the posterior columns, the grey matter, and the antero-lateral columns. Disease of the *posterior columns* produces loss of co-ordination of muscles (from destruction of the longitudinal commissural fibres), and either pain

with hyperæsthesia, or complete anæsthesia, according to the completeness of the process. Destruction of the *grey matter* produces anæsthesia, while in the earlier irritative stages the reflex functions of the cord are exaggerated, with little or no pain. If the anterior cornua are affected the muscles waste. Disease of the *antero-lateral columns* is recognised by loss of movement, without pain or loss of sensation.

Affections of the spinal *membranes* act, not directly upon the cord by the pia mater, but by pressure on the roots of the nerves as they pass through their meningeal sheaths. The symptoms are pain and spasm: sensation is usually to some extent blunted, but motion is not lost until the latest stages of the disease.

Dr. Wood next considers the diagnosis between organic disease of the cord in general, and functional conditions which lead to more or less marked paraplegia, dividing the latter into anæmia, reflex irritation, dyscrasia, and hysteria. *Paraplegia due to anæmia of the cord* is, he thinks, observed, not only after severe hæmorrhage, but also from other exhausting discharges, and a case is quoted which occurred immediately after an attack of cholera. It is characterised by the loss of motion, and sensation being only partial, and by the bladder remaining unaffected; but Dr. Wood admits that diagnosis between this condition and slight congestion of the cord is impossible, except as an inference from preceding hæmorrhage. *Reflex paraplegia* is recognised as a purely functional result of irritation of the urino-genital organs, as from calculus in the kidney or bladder in men, from adherent prepuce in boys, and from uterine tumours in women. *Paraplegia due to dyscrasia* refers to the palsies which sometimes follow diphtheria, etc. In all these varieties paralysis is gradual in its onset, in *hysterical paraplegia* it is always abrupt, in that due to organic disease it may be either, but here pain or spasm are generally present, which are absent in hysterical and other functional palsies. Complete anæsthesia, again, is very rare except in organic disease or hysteria. The well-known feeling of 'a cord round the waist' is considered by Dr. Wood to be characteristic of organic disease; and equally so the retardation of sensory impulses which produces a distinct interval between the patient's seeing his feet touch the floor and feeling it. Reflex action is excited in organic, not in functional paraplegia. Paralysis of the bladder may complicate hysterical paraplegia; but, when hysteria is out of the question, urinary symptoms are diagnostic of organic disease of the cord. If the palsy have suddenly ceased for a time, it is almost certainly hysterical; and although it is not true that electro-sensibility is always lost in hysterical paraplegia, while electro-contractility remains, yet insensibility to a strong faradic current, while the muscles are contracting, is an argument in favour of hysteria.

Passing next to the diagnosis between forms of organic paraplegia, the author discusses our means of distinguishing whether the affection be primary in the cord, or *secondary to disease of the spine*. Rosenthal's test of passing a pair of faradic electrodes down the back on each side of the vertebrae is useful here. There may be some pain produced when the bone is unaffected; but if a current 'of some power' produce no local pain, we may conclude that there is no caries or other disease of the spine.

Next may be separated off those cases of paraplegia due to organic disease of the cord, which are accompanied by rapid wasting of the muscles, and loss of galvanic irritability; such are cases of Cruveilhier's palsy (*progressive muscular atrophy*) and *infantile palsy* (the essential paralysis of children).

Dr. Wood proceeds to divide the remaining organic paraplegiæ into those characterised by rapid, and those by slow onset. The former include hæmorrhage into the cord or its membranes (spinal apoplexy), congestion of the cord, and acute myelitis. Simple *congestion* produces sudden and uniform bilateral paralysis of motion, sensation and reflex function, without pain, spasms, or constitutional disturbance.

[That the power of motion is much more affected than that of sensation, is ascribed by Ollivier to the greater distance of the posterior than of the anterior columns from the vertebrae, and by Dr. Wood to the sensory fibres running deeper in the cord than the motor; but it must be remembered that in hemiplegia also sensation is usually less affected than movement and more rapidly recovered.]

Hæmorrhage into the substance of the cord produces absolutely sudden and complete paraplegia with increase of reflex activity (from removal of inhibition), but without fever, pain, or spasm. If pain and spasm are present, the hæmorrhage may be supposed to be meningeal (a good case of meningeal apoplexy, with gradual onset of symptoms, is given). If the temperature is raised, the above symptoms point to *acute myelitis*, which is, however, confessedly difficult to diagnose from spinal meningitis. Dr. Wood thinks that pain and spasm are more severe in the latter; but doubtless the two are often combined.

Passing to paraplegia of gradual onset dependent on organic disease of the cord, the first group separated by the author is that of paralysis due to tumours, or to curvature of the spine. Next come cases in which tremors are absent, including true non-inflammatory '*white softening*,' a very rare disease, and almost indistinguishable from *chronic myelitis*, and the various forms of the latter. Those recognised by the author are chronic myelitis due to sexual excesses, which is probably curable in its early stages, chronic myelitis with softening, and chronic myelitis with hardening of the cord. Chronic inflammatory softening usually affects the whole cord, and is gradual in its onset. Chronic inflammatory induration (*sclerosis*, chronic interstitial myelitis) rarely affects the whole thickness of the cord at once, and may, therefore, be subdivided by its local distribution. When the seat of the disease is in the *posterior columns*, there result the well-known symptoms of locomotor ataxia. The author believes that pain is very rarely, if ever, absent in this malady, and gives the usual caution against confounding it with ordinary neuralgia, or with so-called rheumatism. He well describes the rapidity, severity, and intermission of these pains, and confirms Charcot's observation that they may affect not only the limbs but the rectum, bladder, or stomach. When a supposed sciatica affects both legs, and has no points of greatest intensity, when, instead of local tenderness in the painful part, there is concomitant anæsthesia, and when the early pains are relieved by long intervals, the disease may be safely regarded as *tabes dorsalis*. Beside the 'spinal' symptoms of ataxia, there are not unfrequently affections of the third, sixth, optic or other cranial

nerves, with diplopia, amaurosis, and optic neuritis, or colour-blindness. [Hence ataxia was described by Gull as 'cerebral paraplegia.']

When the *anterior columns* of the cord are affected by sclerosis or grey degeneration, spasms and heightened reflex activity are the first symptoms, without pain or anæsthesia, and these are succeeded by complete motor paralysis.

Probably the cases of so-called 'spinal epilepsy' of Brown-Séquard (named tetanoid pseudo-paraplegia by Dr. Seguin), are only varieties of ordinary paraplegia, in which the reflex functions of the cord are remarkably active, from cutting off of cerebral inhibition together with irritation of the central grey matter; they may depend on curvature of the spine, tumour, or myelitis as the anatomical cause.

There remain, however, as distinct chronic forms of paraplegia, 'paralysis agitans' and 'multiple (insular) sclerosis.' In the former obscure affection the loss of power in the lower limbs is probably dependent on their shaking; in the latter, the tremors only occur during movement. In both, the lesions are often confined to the cord, but may extend to the pons or to the cerebrum.

[There are some curious Americanisms in this lecture, as 'compromit,' 'the crazy bone,' 'waked up,' 'trunkal pains,' 'a clergyman of some prominence'; words like 'pons varollii' and 'dischromaptosis' occur; and 'in concluding this bird's-eye view of spinal diseases,' the author thinks he 'may be allowed to express the desire that it may prove a useful skeleton.'—*Rep.*]

P. H. PYE-SMITH, M.D.

ERB ON ACUTE SPINAL PARALYSIS IN ADULTS, AND ON OTHER ALLIED DISEASES.—Dr. W. Erb, of Heidelberg, has a paper on this subject in the *Archiv für Psychiatrie*, Band v. Heft 3.

Since Heine's classical work, 'spinal infantile paralysis' has been an acknowledged pathological condition of the nervous system, and so exact was his description that subsequent investigation has only added some particulars concerning the relation of the galvanic current to the affected nerves and muscles. The main features are 'sudden commencement with acute cerebral symptoms and, as a rule, fever, deafness, delirium, convulsions; early development of a more or less complete paralysis spreading over the trunk and extremities, absence of any lesion of sensibility, of paralysis of the sphincters, and of bed-sores, gradual improvement, but very unsymmetrical restoration of movements, which in part are lost for ever; great atrophy, coldness and blueness of the paralysed extremities; diminution and loss of faradic excitability, arrest of growth of the bones, numerous and extensive deformities resulting from the paralysis.'

But milder cases are seen, beginning much in the same way, often running a milder course, and terminating after months or years in complete restoration of the movements. Such are the cases of 'temporary spinal paralysis' of Kennedy, Frey, and others. There may be all possible grades of severity, from the slightest, affecting one extremity or one group of muscles, to the most severe, where several groups are involved and the atrophy and paralysis are persistent. Although in the 'temporary' form restitution follows more quickly and completely, there is no doubt that all forms must be viewed as modifications of the same disease. At first the disease was thought to be one exclusively belonging to the age of child-

hood, but Duchenne de Boulogne proved its occurrence in adults from eighteen to forty-five years old; and his clinical account of symptoms is exactly the same as in children, and other observers have corroborated this. Concerning the production of the temporary form in adults, Duchenne does not speak with much certainty, for the cases given by him are of so recent a date that the termination cannot be surely told.

Later pathological investigations of the permanent form of acute spinal paralysis are very important and conclusive. Heine, from consideration of the symptoms, concluded that the disease was of spinal origin. Lockhart Clarke, Charcot, and others have proved beyond doubt that in every case there is an alteration of the grey anterior horns, acute in its nature and attended with atrophy of the large ganglion-cells and consecutive myelitis; and Gombault has recently shown the same pathological change in the analogous adult affection. It is disputed whether we have to do with a primary degeneration and atrophy of the ganglion-cells (as the French hold) or with an acute interstitial myelitis which causes the injury to the ganglion-cells, but the latter would seem the more correct judged from the changes in the vessels, the numerous granule-cells, the increase of connective tissue, etc.

However caused, the change may be described as an inflammatory one, leading on to atrophy and degeneration, and hence Kussmaul's term 'acute anterior poliomyelitis' may be accepted. The facts now determined throw unexpected light on many hitherto incomprehensible forms of disease. Thus they have led Duchenne de Boulogne to a more precise note of the disease named in his latest edition 'subacute general anterior spinal palsy,' meaning by it a paralysis which develops without fever gradually (in the course of weeks and months), usually attacking the lower extremities before the upper, sometimes proceeding in the opposite direction, very often attacking the respiratory muscles and those of speech and deglutition, leading to death as a rule, but at times becoming stationary, or leading to recovery. There are considerable atrophy *en masse* of the paralysed muscles, diminution and loss of faradic excitability, absence of affection of sensibility and of the rectum and bladder, and no bed-sores.

Frey (*Berliner Klinische Wochenschrift*, 1874, no. 44) gives a good case of this kind, to be distinguished from progressive muscular atrophy, in a girl seventeen years old. However striking these pathological appearances may be, it must be remembered that in the anterior half of the cord there are, besides the grey substance, other structures belonging to the motor system, disease of which may lead to this complex series of symptoms.

An especially promising department in the localization of distinct centres of disease in the cord is found in the so-called 'acute ascending palsy.' There is no doubt that in this group of diseases, chiefly based on the gradually ascending and fatal termination, a number of different forms have been combined, just as the most different disorders used to be named 'paraplegia.' In 'ascending paralysis' many clinically different diseases are included. There are cases, some of which begin with, others without, feverish symptoms; some with, others without brain-lesions; some with lesions of sensation and bladder-affection, others without; at one time atrophy with lessening of electric excitability, at another both absent; now a rapidly fatal end,

then recovery. When among such cases a differential diagnosis is carefully made, it will be seen that a distinct class can be included under 'anterior poliomyelitis.' Eisenlohr reported a case of this kind. A strong man, aged thirty-three years, had acute feverish symptoms, pain and progressive weakness of the legs, which in six days increased to paresis, attacking also the arms, and attaining its maximum in two or three days. Sensibility and the action of the bladder and rectum were normal; there were no bed-sores; reflex excitability was increased; there was no cerebral lesion. Improvement began on the twelfth day of the disease, and recovery ensued in two months. At no time was there atrophy of the paralysed muscles. The symptoms point to poliomyelitis, but it looks as if this inflammatory affection of the grey matter may be so slight and brief that no atrophy results. Again, there may be diseases exactly alike clinically, in which, though the place of the disease is the same, the lesion is different. We cannot at present say that the white columns were not the affected, if not, the principal seat of disease.

Some good remarks are made on the presence of electrical reaction, due to degeneration of fibre as a diagnostic element in these various spinal diseases (*Entartungsreaction*.) T. CLAYE SHAW, M.D.

GUENEAU DE MUSSY ON AUSCULTATORY PERCUSSION.—No. 57 of *La France Médicale* (July 17, 1875) contains an article, by Dr. Noel Gueneau de Mussy, on combined auscultation and percussion in its application to the diagnosis of thoracic diseases. Originally an American proposal, this method of exploration, which has proved so useful in the diagnosis of abdominal tumours, was warmly advocated by Trousseau as a means of recognising pneumothorax: for in cases where the pneumothorax has no communication with the bronchi on percussing the front of the chest, over the sternum, whilst we auscultate the back of the chest, we get a brassy or metallic sound, called by Trousseau *bruit d'airain*. In such cases, metallic tinkling and amphoric cough would be absent; and almost the only physical sign, except the one mentioned above, would be the entire absence of vesicular respiration. It is, therefore, a valuable sign in pneumothorax. In the healthy chest, if we listen with the ear (or a stethoscope) in the anterior region, whilst percussion is made over the dorsal or lumbar apophyses of the vertebræ, we get a metallic vibrating sound, the echo of our percussion, which much resembles the cracked-pot sound. Any alteration in the density or permeability of the lung-tissue, or in the tension of the air which distends it, modifies this consonance; and instead of being vibrating and metallic, it becomes more feeble and duller, whilst occasionally its pitch is raised. In this way, M. Gueneau de Mussy thinks that some central consolidations of the lungs can be better diagnosed than by direct percussion or auscultation. For these purposes, however, it is only available in the upper regions of the chest. In the lower, the heart on one side, the liver on the other, interfere with the vibrations. It is possible, in this way, to make out the upper convex border of the liver better than by any other means. Lately it was in this way that he first discovered that the heart had just been pushed forcibly over to the right side, in a case of extensive effusion into the left pleural cavity in a young female. In an old lady whose dyspnoea was disproportionate to the physical signs, percussion of

the sternum, with auscultation behind, led to the diagnosis of central consolidation of the lung. Of course the ear must be at the level of the consolidation to catch the dull, flat, non-vibrating sound given by it to the percussion waves. To explain the phenomena he adopts the theory of consonance. Emphysema, being often accompanied with considerable tension in the chest, renders this sound dull and less vibrating. So do deposits of tubercle. In cavities of large size, the sound is often much raised in pitch. Rarely we get a cracked-pot sound, and occasionally the vibrations are not much affected. The percussion should be made on the bare skin. Except in the cases mentioned, M. Gueneau de Mussy has not found any striking results from this method of examination.

W. BATHURST WOODMAN.

FRÄNKEL ON THE ELIMINATION OF NITROGEN BY THE KIDNEYS.—Dr. A. Fränkel, assistant to Professor Traube, in Berlin, writes an interesting article on his investigations on the elimination of nitrogen, in nos. 43 and 44 of the *Berliner Klinische Wochenschrift*, 1875. Briefly, his account is as follows.

K. H., a mason, aged forty-nine, was admitted into the Charité Hospital on April 8, 1875. He dated his symptoms most definitely from a chill in the previous October. In December, 1874, he noticed oedema of his feet. On admission, there was moderate oedema of feet, legs, and loins. The mucous membrane appeared normal, and his appetite and digestion were good. There were considerable tension in the radial arteries, and signs of cardiac hypertrophy. There was moderate ascites; no enlargement of the liver or spleen. Pressure over the region of the kidneys gave pain. The urine was yellow, slightly turbid, without sediment, and contained a large amount of albumen. The residue on the filter, when examined with the microscope, showed a large number of compound granule-cells (exudation corpuscles) with detritus, with numerous finely granular fatty casts and many leucocytes, or lymph-corpuscles, which had undergone fatty degeneration. No blood-discs were present. The quantity of urine was said to be less than formerly. As regards the progress of the case, it may be divided into stages. 1. The treatment during the first five days was purely expectant, but the quantity of urine increased to 2,280 cubic centimètres (about eighty ounces). The oedema nearly disappeared; but the albumen and casts, etc., remained as before. 2. From April 14 till May 10 the oedema increased, although the urine reached 2,450 cubic centimètres (nearly eighty-eight ounces) in twenty-four hours, with a specific gravity of 1015. From April 18, the quantity of urine gradually decreased to 1,000 cubic centimètres (about thirty-four ounces) or less, whilst its specific gravity rose. The albumen was still present in large quantities; the other solids were a little less. He was taking compound infusion of senna, and had frequent evacuations from the bowels (as many as six a-day). 3. From May 10 he had lukewarm baths on alternate days, and was packed in blankets afterwards. This removed the dropsy by the 23rd of that month, though the diuresis was lessened. The lowest quantity of urine passed was 650 cubic centimètres (little more than a pint) in the twenty-four hours, with specific gravity 1030. The average of twenty-four hours in this period was 840 cubic centimètres (nearly a pint and a-half), with specific gravity of 1029. 4. From May 31 the baths were discontinued, the dropsy in-

creased, and the urine continued lessened as before.* As regards the chemistry of the urine, many estimations of the urea in it were made, and it occurred to Fränkel that it would be well to estimate, as far as possible, the nitrogen taken as food, and the nitrogen excreted. Bischoff and Voit have shown that when a man or an animal is long kept on the same food, as to quantity and quality, a condition soon sets in, of 'equivalency of nitrogen,' in which just as much nitrogen is found in the urine and fæces as is taken in in the food; provided, of course, that the food is sufficient and proper of its kind, and not so excessive as to demand much intestinal or post-gastric digestion. This man's digestion appeared very good, and his bowels were regular. Dr. Fränkel therefore considered that the fæces might safely be left out of the calculation. He accordingly put him, from May 31 to June 12, on the diet No. III. of the hospital, equal to three portions of broth, and two of bread, with the addition of a piece of roast meat, two eggs, and two glasses of milk in the twenty-four hours. The nitrogen contained in this was calculated at 11.62 grammes, equal to 24.9 grammes of urea. Leaving out the first and last days for greater correctness, the following table shows the urea obtained in five consecutive days.

Date	Quantity of urine in cubic centimetres.	Specific gravity.	Urea in grammes.
June 4	2650	1012	25.44
" 5	2160	1013	23.76
" 6	2670	1013	27.50
" 7	3280	1010	25.58
" 8	2450	1012	22.66

or a mean of 24.99 grammes per diem, which equals 385.63 grains—the average quantity of urine passed equalling eighty ounces nearly, with an average specific gravity of 1012. The chlorides were precipitated previously by silver nitrate. The urea varied within the limits of five grammes daily, probably from slight variations in nitrogen value of diet. As albumen was also present in large quantity, Dr. Fränkel was not satisfied with the estimation of urea by Liebig's method, but made estimations of the total nitrogen with soda-lime in a combustion-tube. He also tried the urine of two convalescents with a similar diet, and found the amount of urea nearly the same.

From April 15 to May 26, on fifteen days, the urine of this patient was freed from albumen, and the mean of the twenty-four hours on these days was 21.87 grammes, equal to 337.67 grains (the maximum being 28.26 grammes, the minimum 19.2 grammes). [An elaborate table of twelve other urea and nitrogen estimations is given, but the context is by no means clear as to which of the patients is referred to in these analyses. As, however, the means are 22.32 grammes of urea, or 10.38 nitrogen, by Liebig's method, whilst the total nitrogen found by combustion was 11.38, equal to 24.38 grammes (376.72 grains) of urea, it will be perceived that there was a very close correspondence in any case.] Fränkel's commentary is briefly as follows. 1. We have here a pure, uncomplicated case of diffuse nephritis, in the second stage (of Traube, etc.), or in other words, in the fatty stage. The cardiac and vascular states are considered as direct consequences of the renal affection. 2. The noteworthy peculiarities are (a) the early diminution of the amount of urine; (b) the fact that the

patient passed in twelve days, from May 31 to June 12, an average daily quantity of 22.32 grammes of urea (in each twenty-four hours). If we pick out five days of those in which the total nitrogen eliminated was calculated, we find their amount to be 22.18 grammes of urea, but the total nitrogen amounted to 11.62 grammes or, calculated in urea, 24.9 grammes, equal to 376.7 grains, or about equal to the nitrogen ingested. It would therefore appear that enough of his kidney-tissue remained physiologically competent, in spite of the grave disease of the rest. 3. The process of elimination, so far as performed by the healthy parts of the kidney, may be termed compensatory. Like cases in which one kidney is extirpated, or, for example, a dog weighing from sixty-six to eighty-eight pounds will, on the fifth or sixth day of fasting, excrete about 185 grains of urea; but if he be fed on lean meat of about five and a-half pounds weight, he will pass the enormous quantity of 2,810 grains of urea day by day!

Fränkel concludes, therefore, that diffuse nephritis, with much albumen in the urine, is not necessarily connected with diminished excretion of urea and other nitrogenised products; since much of the kidney may remain functionally healthy and compensate the rest. These are the cases which will throw light on renal pathology, if only careful analyses are made. [This very valuable paper of Fränkel's is somewhat impaired by a want of clearness and want of correspondence between the tables and the statements in the text. The man's weight is omitted; and if eighty ounces of urine is to be considered a small quantity for twenty-four hours, we should surely have had some data as to Fränkel's estimate of the normal quantity of urine.—*Rep.*]

SCOLOSUBOFF ON ARSENICAL PARALYSIS. — No. 25, vol. ii. of the *Thermes de Dax*, states that M. Scolosuboff, physician to the Moscow hospital, has frequently noticed arsenical paralysis in workmen. The extremities are most affected, fingers and toes, hands and feet. The parts attacked present the following characters: 1. Atrophy of muscles, with loss or diminution of contractility under the influence of electric currents; 2. Altered sensibility; 3. Lowering of the temperature, alteration of the colour of the skin and œdema. Dr. Scolosuboff has made experiments on dogs with arsenite of sodium, mixed with their food, or subcutaneously injected. In chronic poisoning he has found that arsenic accumulates in the nervous centres, where it exists in quantities thirty-six or thirty-seven times greater than in the muscles of the same animal. In acute poisoning the arsenic can sometimes only be found in the brain. He therefore concludes that in arsenical poisoning, the medical jurist ought specially to investigate the nervous centres, since the arsenic accumulates in these. As regards the Moscow workmen, he supposes that the arsenic first attacked the brain and spinal cord, and that the affections of the extremities were dependent on the lesions of these centres. W. BATHURST WOODMAN.

FERRIER ON LABYRINTHINE VERTIGO—ME-NIÈRE'S DISEASE.—Dr. Ferrier (*West Riding Asylum Medical Reports*) describes a typical case of this disease. The patient, aged thirty, a member of the medical profession, consulted Dr. Ferrier in reference to certain distressing symptoms, which briefly may be enumerated as giddiness, faintness, a feeling as if being whirled to the left, and a buzzing and ringing noise in the left ear. On otoscopic exami-

* This statement seems inconsistent with the figures in the tables. It probably refers to the man's own account of his former habits.—*Rep.*

nation, the left auditory meatus was found to be somewhat congested and catarrhal, but was not stopped up, nor was there any discharge. The membrana tympani was also congested. The sense of hearing as regards the aerial vibrations of the tuning-fork and to musical notes was unimpaired, and even more acute in the left ear than in the right. There was, however, complete insensibility in the left ear to the vibrations of the tuning-fork placed on the bridge of the nose, or on any part of the skull. These were only perceptible on the right side, in whatever position the tuning-fork was placed.

[A most able and lucid discussion of this disease follows the report of the case, which is of such importance that we can only recommend our readers to peruse it for themselves, as the whole paper is worthy of the deepest consideration.—*Rep.*]

Touching upon the physiology of the labyrinth, Dr. Ferrier tells us that the membranous canals are supplied with nerves only at their ampullary dilatation. These canals being filled with fluid, it is easy to see that variation in the position of the head will cause different degrees of tension or pressure on the respective ampullæ, and hence impressions on the ampullary nerves may be generated in this manner apart from any impression originating from without. If we suppose that the head is perfectly still, then the labyrinthine impressions are in a state of statical equilibrium. A movement of the head to one side or the other will alter these conditions. A sudden deviation of the head will cause simultaneously a plus and minus variation in opposite ampullæ, variations which call forth adapted movements of equilibration. Hence we can understand that the balance will be overthrown if one of the forces is withdrawn or abnormally altered. The perturbation of equilibrium will be in the direction of the unopposed or predominating force.

Applying the experimental data obtained by Flourens and Crum-Brown to the pathology of Menière's disease, Dr. Ferrier goes on to say that the characteristic symptoms of the disease are—that the patient is suddenly seized with vertigo and a feeling of nausea or positive sickness, with great constitutional depression and faintness. Usually the giddiness comes on simultaneously with ringing or buzzing in one, or it may be in both ears; and generally in the ear principally affected more or less deafness is found to exist, which ultimately becomes absolute.

Contrasting the conditions of negation and irritation of the semicircular canals, Dr. Ferrier writes that, from the researches of Flourens, it would seem that negation of the horizontal canal on one side causes the body to be thrown or spun towards the same side, and that negation of the superior canals causes the body to be thrown forwards, and a like negation of the posterior canals causes the body to be thrown backwards. We should, therefore, expect that if the lesion were an irritative one the phenomena would be reversed; and that, therefore, irritation of the left horizontal canal should cause a feeling of rotation to the right side, and *vice versa* in the case of irritation of the right; and similarly, a feeling of being hurled forwards or backwards according as the irritation affected the posterior or superior canals respectively.

Next, in regard to the feeling of giddiness or vertigo: disturbances of equilibrium do not necessarily create a feeling of vertigo; and, as Hughlings Jackson justly remarks, it is erroneous to say that

the feeling of vertigo is the cause of the reeling. Vertigo is rather the subjective side of perturbed or incongruent sensori-motor co-ordination. In Menière's disease it is chiefly the incongruence between labyrinthine and visual impressions which causes the feeling of giddiness. When the body is rotated round on a revolving disc, there is no feeling of giddiness so long as the eyes are shut, as Crum-Brown has shown. If the eyes be opened, however, either during the primary rotation or during the sense of complementary rotation after the disc has ceased to revolve, a feeling of giddiness at once comes on. External objects seem to be revolving also, and this causes a feeling of insecurity or giddiness, and giddiness is also felt if external objects turn round, though the individual does not. Labyrinthine impressions are correlated with ocular movements in the co-ordinating centres, and Flourens' experiments show that the oscillation of the eyeballs occurred when the semicircular canals were injured. This is a fact of considerable importance in reference to the mechanism of central co-ordination, and the condition of the eyeballs in attacks of Menière's disease would be well worthy of study.

The next most prominent symptom of Menière's disease is the nausea or sickness, with its accompanying systemic depression. Czermak found that section of the semicircular canals in pigeons caused not only the disturbances of equilibrium and agitation of the eyeballs described by Flourens, but also very frequently nausea and vomiting. Here, therefore, we have another point of similarity between Menière's disease and experimental lesion of the semicircular canals in animals.

The last symptom of note in Menière's disease is the local condition of the ear, and particularly as regards hearing. There is frequently pain, which is intensified by sound, in the region of the affected ear. This is quite in accordance with Flourens' results. He found that injury to the semicircular canals caused manifest signs of pain, and that sounds seemed to cause painful sensation. Hearing is progressively abolished in the ear affected with the lesion, which gives rise to the special symptoms of labyrinthine vertigo. As injury to the semicircular canals did not abolish the sense of hearing in Flourens' experiments, but as it was abolished by destruction of the cochlea, we must conclude that when, in the progress of Menière's disease, deafness ensues, the lesion has extended into the cochlea.

The subjective sensations of whizzing, ringing, &c., in the affected ear will coincide with a stage of abnormal irritation preceding total annihilation of the function of the auditory nerve.

Dr. Ferrier concludes by saying that, should the above observations be confirmed, they will serve to show that the semicircular canals are, as regards hearing, specially concerned in the reception and transmission of skull vibrations in contradistinction to aerial vibrations.

H. SUTHERLAND, M.D.

ELLIS ON THE CAPILLARY BRONCHITIS OF ADULTS.—Dr. Colvin Ellis (*Series of American Clinical Lectures*, edited by E. Seguin, M.D., No. VII.) devotes a clinical lecture to capillary bronchitis in adults, and the frequency of its complication with changes in the air-vesicles, or parenchyma of the lungs, and its relation to catarrhal pneumonia. He shows that the line between capillary bronchitis and catarrhal pneumonia is

too sharply drawn; and the complications of the former often entirely unnoticed, or obscurely hinted at. The lecture is founded upon five cases, three of which exhibited the symptoms and physical signs announced to be indicative of capillary bronchitis; with the addition of dullness on percussion over certain regions of the chest. One of these ended fatally, and *post mortem* examination showed consolidation of those parts of the lung where deficient resonance was detected during life; they were dense, distended, non-crepitant, covered especially with false membrane, and exhibited several distinct forms of morbid change. The lower portions of the lungs were in a state of pale grey translucent infiltration, with exceedingly minute yellow opaque points, apparently due to fatty degeneration of the alveolar contents, and large yellow opaque spots and lines, suggesting bronchial canals. The upper border of this infiltrated portion presented small patches, the size of beans, dotted with yellow, containing in their centres bronchi, with more or less purulent matter. Both large and small bronchi contained purulent secretion. Microscopic examination of these sections of the hardened lung showed alterations characteristic of croupous, catarrhal, desquamative, and interstitial pneumonia, the latter more especially of a chronic character. The two remaining cases differed somewhat from the rest. One was comparatively slight, the physical signs being limited to subcrepitant râles over the right upper lobe only, without impairment of resonance on percussion. The last example exhibited the symptoms of acute pulmonary consumption, and the *post mortem* examination revealed extensive infiltration of both lungs with cheesy material, and vomicae. In addition there were nodules and granules, grey and opaque, of the size of a pin's head; many of which, particularly the larger, presented the appearance of peribronchitis, while the smaller might have been miliary tubercles. In the kidneys were yellow nodules, and in the liver miliary tubercles. After discussing the various and somewhat conflicting descriptions of capillary bronchitis given by leading authorities, the author contends that the frequency with which the inflammation involves the air-vesicles and gradually causes consolidation of the lung, is not generally stated with sufficient distinctness. So much stress has been laid upon resonance, that dullness is supposed to exclude the disease, while it is only the evidence of a very common accompaniment both in cases where the infection is general and in those where it occupies only a limited portion of lung. The changes which these consolidated portions of lung undergo may be traced until they end in the destruction of the lung-tissue, and the process may be repeated in one portion of the lung after another. The subcrepitant râles of capillary bronchitis may be mingled with the fine dry crepitant râles which indicate an affection of the air-cells, and which differ in no way from those heard in ordinary croupous pneumonia. In some cases the symptoms and physical signs are those of ordinary pneumonia, but dullness and subcrepitant râles persist, and the patient sinks with diseased portions of lung, partly caseous, partly destroyed. The statement of Jürgensen that catarrhal pneumonia never begins in the air-vesicles, is not to be accepted absolutely. Cases are met with in which the first physical sign is the dry crepitant râle of vesicular inflammation, followed after a time by the moist subcrepitant râle of the bronchioles. It would be impossible to show that

the inflammation did not begin in the small bronchi, but the evidence of such beginning is wanting.

[These observations have an important bearing upon the question of the inflammatory origin of phthisis. One great difficulty in the way of the acceptance of the views of Virchow and Niemeyer—that most so-called tubercles in the lungs are primarily of inflammatory origin—lies in the fact that the physical signs by which such catarrhal-pneumonic changes ought to be betrayed are not met with clinically as common antecedents of pulmonary tubercular phthisis. The physical signs of limited pneumonia in combination with capillary bronchitis are frequently encountered in young children, but they are rarely met with between puberty and full adult life—the time when pulmonary phthisis is usually developed. If simple broncho-pneumonia does constantly occur at this time, and is the starting-point of most cases of so-called tubercular consumption, its existence has been overlooked; but this may be due to the neglect of sufficiently minute physical examination of the chest in cases presenting, perhaps, merely general symptoms of slight bronchitis or catarrh.—*Rep.*] W. B. CHEADLE, M.D.

EWALD ON THORACENTESIS.—Dr. Ewald has a paper on this subject in the *Charité Annalen* for 1874 (Berlin, 1876), in which he gives statistics of forty-six cases of pleuritic effusion, twenty-six of which were incised, including three cases of empyema. Of these seven died, six recovered, and twelve were improved by the operation; nine were punctured, with the result of seven deaths and two improved; and eleven underwent no operation, with seven deaths, three recoveries, and one improved. The incisions were made freely without antiseptic precautions, but various antiseptic lotions were used in the after-treatment; puncture was made with disinfected instruments and exclusion of air. In the incised cases none had any increase of fever after the operation, though one died of collapse after four hours; of those punctured, four had increase of fever and one died of collapse sixteen hours afterwards, but in both cases there were complications. As the result of his experience he formulates the following rules.

1. Serous effusions should not be punctured before the third week except to avert imminent death. Puncture in the third or fourth week is most favourable as to mortality and prognosis.
2. If *puncture* be made with exclusion of air and disinfected instruments, no serous effusion will putrefy.
3. It must be proved by exploratory puncture whether a pleurisy is purulent or serous.
4. Purulent pleurisy should be incised as early as possible, and not punctured.
5. The mortality after incision for empyema is between 50 and 60 per cent.
6. Bloody exudations in his cases have been always caused by malignant new formations in the pleura.
7. Serous exudation does not exclude the existence of tuberculosis or cancer of the pleura.

ROBERT SAUNDBY, M.B.

RECENT PAPERS

Endemic of Pythogenic or Miasmatic Infectious Pneumonia, with illustrative cases. By Dr. W. B. Rodman. (*American Journal of Medical Sciences*, January, 1876.)

- On the Pathogenetic Physiology of Follicular Diseases of the Throat and Air-passages. By Dr. Beverley Robinson. (*American Journal of Medical Sciences*, January, 1876.)
- Case of Hysteria simulating Progressive Locomotor Ataxia. By Dr. W. H. Webb. (*Ibid.*)
- Case of Mediastinal Tumour. By Dr. M'Call Anderson. (*Glasgow Medical Journal*, January, 1876.)
- Two Cases of Hydatids of the Liver, treated by Puncture. By Dr. R. Scott Orr. (*Ibid.*)
- Hepatic Colic from Gallstones, with Recurrent Jaundice. By Dr. W. Skeddon. (*Ibid.*)
- Remarks on Chronic Dysentery; with the History of a Case of five years' standing, cured within five weeks by Topical treatment. By Dr. T. G. Thomas. (*New York Medical Journal*, January, 1876.)
- A Case of Encephaloid Cancer of the Lungs. By Dr. G. W. Gay. (*Boston Medical and Surgical Journal*, January 6, 1876.)
- Some Cases of Chronic Tobacco-Poisoning. By M. Cordier. (*Lyon Medical*, January 16, 1875.)
- A Case of Empyema. By Dr. Walcher. (*Gazette Médicale de Strasbourg*, January 1.)
- Case of Hystero-Epilepsy. By MM. Bourneville and Reynard. (*Gazette Médicale de Paris*, January 15, 1876.)
- Addison's Disease; characteristic Change in the Suprarenal Capsules. (*Le Progrès Médical*, January 15.)
- Suppurating Monoarthritis: Fatal Embolism of the Pulmonary Artery. By M. M. V. Chalot. (*Montpellier Medical*, January, 1876.)
- Note on a Case of Diphtheria in the Adult, complicated with Emphysema of the Cellular Tissue. (*La France Médicale*, January 5, 1876.)
- On Applications of Electricity in Muscular Traumatic and Atrophic Paralysis. By Dr. Paul Delmas. (*Le Bordeaux Médical*, January 4, 1876.)

SURGERY.

SEMPLE ON SPIDER-BITES.—In a paper in the *Virginia Medical Monthly* for December, Dr. G. W. Semple describes the following cases of spider-bite which have occurred in his practice during forty years.

Case I.—September 4, 1853. I was called to see Mr. D., who had been bitten by a small black spider on the prepuce, whilst on the privy seat, at half-past twelve o'clock. The bite at first caused only itching of the prepuce, with a little redness of the part, but in less than half an hour nausea, followed by severe abdominal pains, ensued. A messenger was despatched in haste on horseback for me, three miles off. Before I reached the patient at half-past two o'clock, violent præcordial pains extending to the axilla, and down the arm and forearm to the fingers, with numbness of the extremity, had succeeded, attended by apnoea. In consequence of the violence of the symptoms, Dr. Stineca, surgeon of the post, had been sent for, who had given two doses of laudanum of a drachm each, and two of rectified whisky of two ounces each; and, being in ill health and unable to remain, had ordered his hospital steward to apply four dry cups over the præcordia. This had just been done when I arrived. I saw the blood, thin and florid, fill the cups like water oozing through muslin. When the cups were removed, the blood, emptied into a basin, did not coagulate; and blood continued to ooze slightly from the surfaces to which the cups had been applied until the next morning, though a solution of tannin was applied. I found the patient suffering extremely from the most violent præcordial pains and from apnoea, and also violent pain in the left arm, which was almost paralysed. His pulse was 130 and very feeble, his skin cold as marble, and his countenance expressive

of the deep anxiety he felt and expressed in words. The laudanum and whisky seemed to have produced no effect—the nausea and abdominal pains having subsided before they were administered. There was no pain, inflammation, or swelling where the bite was received. Even the itching of the part had subsided. I gave the patient every half hour for several hours a drachm of aromatic spirits of ammonia, and as much whisky and water as he could be induced to take, and afterwards gave them every hour; also pediluvia of hot mustard and water, frequently repeated, until the next night.

8 A.M.—The symptoms continued unabated; indeed, the patient grew worse until half-past two o'clock, twenty-six hours after he was bitten, for his pulse had then become so frequent that it could not be counted, and so feeble that it could scarcely be felt. He then vomited black vomit copiously—a quart or more. Soon afterwards reaction set in, his pulse gradually regained force and became less frequent, the pain subsided, and the respiration improved. At 8 P.M. the pulse had gained considerable force, and the patient slept until some minutes after 12, when he awoke; his pulse was pretty full at 1.10; his surface warm and perspirable, and he felt almost free of pain. After a short interval he again fell asleep, and slept quietly until morning, when he awoke—his respiration healthy, pulse 80, regular and with sufficient force, and entirely relieved of pain. He soon afterwards had two pretty copious evacuations from the bowels, similar to the black vomit he had vomited. After this, he said he felt quite well, and took a light breakfast and dinner, and returned that evening to his residence in Portsmouth, and in a few days went to work at his trade. In thirty-six hours from the time he was bitten, he took about three quarts of the best rectified whisky, without showing the least symptom of intoxication.

Case II.—I report from memory. About June 20, 1861, on a scout with a party of cavalymen under command of Major Hood (afterwards Gen. Hood), in a wood about four miles north-west of Newport's News, a man belonging to Captain Goode's (Mecklenburg) troop, about 3 A.M., just as the order to saddle was given, cried out that he was bitten by a spider, and called for me. He was bitten in the groin, and complained of only a slight pricking and itching at the spot where he was bitten, but was complaining of severe abdominal pain, with nausea, and a sinking sensation at the epigastrium; and his pulse, in a few moments after the bite, had already become quick and thready, and the skin very cold. I immediately commenced the administration of aromatic spirits of ammonia and whisky, as in the other case. He was moved on horseback with the party about a mile and a half, a good pallet of blankets was made for him in a thick shade, and he was rendered as comfortable as possible. The symptoms followed the same course as in the first case, but amendment commenced about 12 M., when all my supply of whisky—one and a half quart bottles of the best of my own private store—and all the supply of spirits of ammonia, were exhausted; but the commencing reaction was sustained by a pint of whisky procured (the last he had) from a friend of mine hard by, and by 5 o'clock he was well enough to be taken ten or twelve miles in a spring wagon, and arrived quite well, after an upset going down a hill. There were no symptoms of intoxication in this case. The spider which inflicted the wound in this case was killed and examined by the patient,

and proved to be a small black spider. Each of these two patients was a healthy man in the prime of life; exact age not known.

Case III.—I was called about 10 A.M., Oct. 6 1867, to see W., aged eighteen, who had been bitten by a spider of the same sort on the back of the left hand the night before, about seven o'clock. There was no pain, but only itching and redness at the part bitten at first; but violent pain soon commenced there and extended in a short time up the arm and forearm to the shoulder, and thence to the præcordial region. Plantain and some other domestic remedies were applied to the part without relief. When I saw him, the symptoms were grave enough to excite the apprehension of his parents, and to produce very great suffering in the patient, but, though like the two former cases, were by no means so severe. Milk-punch, in which form alone the patient would take whisky, was given freely, and ten grains of bromide of potassium and ten of bromide of ammonium, with three of iodide of potassium and a drachm of aromatic spirits of ammonia, were given in water every hour for four hours, when the patient was quite relieved.

Case IV.—A quadroon mulatto woman called on me about twelve o'clock, the night of September 23, 1874, to visit her daughter, a healthy woman, about twenty-two years old, who she said was suffering very greatly from pain in the right arm and shoulder, caused by the bite of a spider, small and black, which she killed when inflicting the bite about 7 P.M. Being in a copious perspiration following a fever from cold, I declined to visit the patient, but prescribed for her as in the last case. One dose of the medicine and punch was given, but, the patient growing worse, the mother would give no more. She called me up soon after day, begging me to go immediately to see her daughter, whom she thought to be dying. I found her apparently moribund; her skin as cold as marble; violent pain extending from the bite on the right wrist up the forearm and arm to the shoulder, and thence up the neck to the back of the head on the right side; more violent pain in the præcordia, extending thence to the shoulder and axilla on the left, and down the arm and forearm to the ends of the fingers, and this extremity partially paralysed; added to this, apnoea was extreme; the respiration only occasional—gasping; the pulse could not be felt in the left radial, and I was not sure that I felt it in the right. Having seen accounts of Halford's practice of injecting aqua ammoniæ into the veins for the bites of Australian serpents, I determined on its use (though I could not remember of what strength Halford used the ammonia); and as the water in the house was charged with salt, alum, and other impurities, I injected the strong aqua ammoniæ undiluted. Charging my hypodermic syringe with thirteen minims of aqua ammoniæ, I introduced the point carefully into a large superficial vein in the arm, which ran up the middle of the belly of the biceps, about the middle of the arm, holding the syringe almost parallel to the vein, and injected about two minims; and, waiting about an interval of a minute, two minims more, until I had injected ten minims. I was then about to withdraw the syringe, when the patient gave a spasmodic jerk of the forearm, pressing my right arm forward, and so pressing the point of the syringe through the vein into the cellular tissue, and sending home the piston, injecting the remaining three minims into the cellular tissue. I withdrew the syringe and placed my finger on the

pulse, where I held it about five to ten minutes. Feeling that the pulse constantly grew stronger and the skin warmer, I washed the syringe and replaced it in the case; when, looking at the patient, I was astonished at the calm and painless expression of her countenance, lately expressive of extreme anxiety and pain. On examining her pulse, it was full, regular, and beating only 77. The skin was warm and perspirable, and the respiration natural. She seemed to have been snatched *articulo mortis* and restored to health. To my question, 'How do you feel?' she replied, 'The most I have to complain of is the smarting where you stuck me in the arm.' On examining it, I found a blister there as large as my thumb-nail. A slough took place in a few days, which almost healed up kindly until she irritated the small remaining healthy ulcer while carrying a child on the arm to a picnic. Though a slough was the consequence of the injection in this case, yet it conclusively proves that dilute aqua ammoniæ may be safely injected into the veins; that it is only necessary to take care that none be injected into the cellular tissue, since no inconvenience followed the mingling of the strong ammonia with the blood in the vein, but only from its injection into the cellular tissue. To guard against such accidents, it is only necessary to open the vein to be injected with a lancet, and use a bulb-pointed syringe.

Case V. On September 28, 1875, I was called at seven in the evening to see Miss D., a healthy young girl, thirteen years old. At about half-past five o'clock she had thrust her right hand through a spider-web into a rose-bush to pluck a rose. She felt a stinging sensation on the wrist, accompanied by itching and redness at the spot. For several minutes there was but little pain, but in half an hour a painful sensation began to be felt at the spot, which quickly extended up the arm to the shoulder, and, in the course of an hour, along the neck to the back of the head. Several domestic remedies were applied to the spot supposed to have been bitten by a spider, but none affording any relief, and pain in the præcordial region with apnoea coming on, I was sent for. When I arrived, she was screaming fearfully with pain, and frequently exclaiming that she should lose her breath and die. The pulse had become thready and the surface cold. I had the bitten part rubbed with volatile liniment, and gave her at once the bromide of potassium and ammonium, and iodide of potassium with aromatic spirits of ammonia, and an ounce and a half of whisky, with water. Soon after swallowing the whisky and water, she said she felt a glowing sensation in the stomach, and not long afterwards a general glow. The skin became warmer, and the pulse grew stronger, with considerable abatement of the pain. At 8 P.M., a second dose was given; reaction continued to be developed, the pulse and respiration to improve, and the pains to abate. Just before 9 P.M., she fell asleep, and when I visited her in the morning, she had gone to school quite well.

The question arises, to what was the prompt recovery due in this case? Was it to the local application? Perhaps so; but more probably to the ammonia compounds finding from some cause an unusually ready admission through the portal into the general systemic circulation, not being eliminated in the bile by the liver, to be re-absorbed and required to go this round several times perhaps before gaining admission into the systemic circulation. That this is not unfrequently the case in regard to

our remedies, is rendered probable by what I have often observed in the treatment of pneumonia with the carbonate of ammonia, and which, I doubt not, others have also observed, viz., that after having been administered for twenty-four to thirty-six hours without apparent effect, it will suddenly produce its best effects on the pulse and respiration. To what other cause can this be attributable than that I have mentioned? But if aqua ammoniacæ can be safely injected into the veins, and produces the same effect we seek to procure by the administration of carbonate of ammonia in pneumonia, in increasing the force and diminishing the frequency of the heart's action, why should we not resort to the injection of the former in the treatment of pneumonia, and in all cases in which the same effects are desired?

BEARD ON ELECTROLYSIS OF BENIGN AND MALIGNANT TUMOURS.—In this paper (*New York Medical Record*) Dr. Beard relates cases to illustrate the uses of electrolysis.

Case I.—An enlarged cervical gland was treated by external applications of electricity. It suppurated and was opened. The cavity was then repeatedly electrolysed by a mild current from the negative pole, and gradually healed.

Case II. was one of ganglion of the wrist, of the size of a walnut. Both electrodes were inserted, and the negative was worked in all directions over the inner surface of the sac. Inflammatory action followed sufficient to obliterate the growth.

Cases III. and IV. were nævi of the face which involved the skin. They were destroyed, one by the action of the negative, the other by means of the positive pole. Cicatrices were necessarily left.

Case V. was one of hæmorrhage from the gums behind the upper incisor teeth. The gums were apparently healthy, but the patient suffered from and died of hepatic disease. On one occasion electrolysis arrested the bleeding for a week. The operation was repeated, but the effect is not reported.

Three examples of malignant tumour are given.

A scirrhous of the mamma was excised by Dr. Smith. Dr. Beard thereupon electrolysed the whole raw surface. Erysipelas followed, but the wound healed, and the patient left the hospital.

A small epithelioma of the face was removed by electrolysis of its base. The operation lasted half-an-hour.

An epithelioma of the cheek was treated by a somewhat complicated process. An incision was made in the skin, and the bleeding was arrested by placing a galvano-caustic wire in the incision. The tumour was then removed by electrolysis. It recurred. The operation was repeated, but the growth again returned.

Dr. Beard states in favour of electrolysis in malignant tumours; that the healing is satisfactory, that pyæmia does not follow, that the irritative fever is not dangerous, and that the cure is apparently more permanent than after simple excision.

[These cases show what electrolysis is capable of doing; they are unfortunate as selected examples of its usefulness. It was probably the best treatment in the case of hæmorrhage, and it is doubtless one mode of curing a ganglion which has resisted rupture and puncture. But in the enlarged gland it plainly did little if any good, and the other cases might with advantage have been trusted to ligature, the galvanic cautery, or the knife. There is no proof of the claims advanced by Dr. Beard on

behalf of electrolysis in malignant tumours. Experience points to its uselessness except for the relief of pain.—*Rep.*]

JOHN DUNCAN, M.D.

DUPLAY AND OTHERS ON THE TREATMENT OF DIFFUSE PHLEGMONOUS PERIOSTITIS.—A discussion on the treatment of diffuse phlegmonous periostitis lately took place at the Société de Chirurgie de Paris (*Gazette des Hôpitaux*, October 23, 1875). It related to a paper by M. Duplay, read at the above society on October 13, and of which a tolerably complete abstract will be found in *La France Médicale*, Oct. 22. The patient was a lad, aged sixteen, suffering from abscess in one of the phalangeal joints of the middle finger, and who was afterwards attacked with diffuse periostitis, rapidly passing on to abscess, and exposing nearly the whole shaft of the tibia. About a month after his admission into hospital, as his general condition was becoming grave (rapid pulse, high temperature, rigors, diarrhoea, delirium, etc.), M. Duplay found himself obliged to interfere by surgical operation. Relying on three published cases, one by M. Letenneur, of Nantes, one by the present reporter (both referred to by M. Ollier in his *Treatise on the Regeneration of Bones*), and a third by Dr. McDougall (*Edinburgh Medical Journal*, 1875),* M. Duplay determined to resect the shaft of the tibia subperiosteally, instead of amputating, especially as a separation could be detected between the lower epiphysis and the shaft. A free incision was made, the periosteum where it was adherent was easily detached, a chain saw was passed round the bone at the upper limit of the disease (as was believed), and the bone sawn through opposite the tubercle of the tibia. The diseased shaft was then easily extracted. Esmarch's bandage was employed. Very little blood was lost. The patient's general condition improved immediately, but the portion of the shaft which had been left kept up suppuration, and at the end of three weeks it became necessary to remove it also; the two together measured $28\frac{1}{2}$ centimetres, or nearly nine inches. The patient recovered perfectly, and with a thoroughly useful leg. In four months he left the hospital walking with a stick. The tibia had been reproduced, and the wound had healed, with the exception of a little sinus, which led to a sequestrum in the upper part of the bone. The tibia was, however, shortened by about an inch, and the fibula curved to accommodate itself to this shortening. No mention is made of any affection of the knee or ankle joints.

In the remarks on this very interesting and successful case which M. Duplay appends to the history, he dwells chiefly on the advantages of resection in such cases as contrasted with amputation; and in this respect no one seems to have contested his opinion. In fact, it is almost too plain to allow of discussion, that if a youth can be restored to health, with a limb only slightly shortened, and in other respects as useful as ever, it would be a grievous mistake to amputate. Nevertheless, it might perhaps have been as well to point out that in these cases resection of the bone is not always successful in avoiding the necessity for subsequent amputation. But the speakers who followed M. Duplay seemed rather to turn their attention to the question of the pathology of the disease, and to that of the necessity

* A fourth case is related by Mr. Spence in his recently published Address on Surgery at the meeting of the British Medical Association; but it was not then completed.

of resection as opposed to the expectant treatment, by incision and drainage, supporting the general health and strength with appropriate food and medicines—and afterwards removing any sequestra that may form. With respect to the pathology it seemed to be the general opinion that the bone does not perish, at least in its whole extent, unless the medullary tissue is also involved in the inflammation—*i.e.*, unless along with the diffuse periostitis there is also osteomyelitis. The opinion is at any rate a probable one, though the present reporter cannot see any proof of it sufficient to justify the axiomatic style in which it seems to have been announced by some of the speakers,* but it is really a point of minor importance. All that is needed for the surgeon's guidance in the practical treatment of the disease is to ascertain that the bone is thoroughly denuded of periosteum in the greater part of its extent, and that the patient's condition is so grave as to necessitate some surgical interference. The choice then lies between amputation and resection. If the surgeon temporise, it is true that the patient may yet survive, but the great probability is that he will die of pyæmia; and even if he do survive, a long, painful, and dangerous period is before him of successive operations for the removal of sequestra, a period often reckoned by years, and sometimes terminating after all in the loss of the limb. As to the precise pathological condition of the bone, it can hardly be ascertained except by examination after removal. No symptoms exist, as far as is known at present, by which the inflammation of the medullary tissue, if present in such a case, can be diagnosed. The more important matter surgically is to distinguish the cases in which immediate resection is indicated from those where it is better to wait. Everyone must admit with MM. Marjolin, Trélat, Guyon, and other speakers in this debate, that cases of periosteal abscess occur, threatening enough at first, but in which the general condition of the patient is not so profoundly affected as in M. Duplay's case, and in which the case may and ought to be treated in the expectant manner above indicated.

At the same time, the present reporter may be permitted to say that, in speaking of the case under his care, published originally in the *Lancet* for 1866, vol. i. p. 340, and afterwards in his treatise on the *Surgical Treatment of Children's Diseases*, M. Verneuil is completely in error in stating that the periosteum was adherent over two-thirds of the tibia. So far was this from being the case that it is expressly stated in the French translation of that work, 'La tuméfaction et la fluctuation perçues au niveau du genou et du cou-de-pied ne me permettaient pas de douter que la dénudation du tissu osseux ne s'étendit jusqu'aux limites de la diaphyse,' and this view was completely verified at the operation, when the tibia was found to be so completely separated from the periosteum that no instrument was required to detach it. He can, therefore, express his entire agreement with M. Verneuil in the opinion that it is unnecessary to resect the whole of a bone when only a third of its shaft is denuded; while, at the same time, he looks back with entire satisfaction to the treatment pursued in that case. The fact, also, is incontestable, as stated by M. Marjolin and M. Duplay, that the necessity for so grave a step as the resection of the whole shaft of a long bone is one which rarely oc-

curs. And, further, the success of resections limited to a portion of the shaft is far less probable than that of those in which the whole diaphysis has become separated from the periosteum, and can with a little gentle traction be detached from its articular extremities. It never was the present reporter's intention to recommend the resection of the bone, except in cases where, in the judgment of the surgeon, the death of the bone is either accomplished or inevitable, and in which nothing but a continuance and propagation of inflammation can result from leaving it. And he refers with confidence to his writings on the subject as expressing this meaning with sufficient clearness. M. Duplay's interesting case shows incontestably the success which may attend the attempt to save the patient's life without amputation in such instances. One rather singular omission in the debate, as reported (though the report is by no means so full as might be desired), is that of all reference to the abscess in the joints, which is liable to occur when the whole bone is affected. Abscess in the knee or ankle, or both, is very liable to happen; yet the limb may be saved—as is proved by the case often referred to in this debate; for, in that case, an incision was required into the knee-joint, and permanent ankylosis followed.

T. HOLMES.

WOODS ON A FOREIGN BODY IN THE BLADDER. — Dr. J. T. Woods, of Toledo, Ohio, relates the following case in the *Detroit Review of Medicine* for December 1875.

On the afternoon of July 30, John Leutsch, a Pole, aged 23, obtained possession of a string of beads belonging to his wife, long enough to go three times round her neck, and introduced them into his penis. In the effort he easily succeeded, and, after having satisfied his curiosity, was somewhat unsettled by finding that he could not remove them. Experiencing discomfort from frequent calls to urinate and the half a dozen inches of the string of red beads dangling from the end of his penis, he on the 31st consulted Dr. Hohley, who in his efforts at removal broke the string within the penis.

The following morning, Dr. Woods was invited by Dr. Hohley and Dr. Brown to visit the case in consultation. Introducing a pair of Gross's trachea-forceps into the urethra, Dr. Woods succeeded in removing twelve of the beads by slipping them off the string. The urethra being now clear, the introduction of a sound detected foreign solid material in the bladder.

It was at once determined to remove them by urethrotomy. The patient was accordingly placed in the position for lithotomy, and under the influence of chloroform. A staff being introduced, the membranous urethra was incised, and, introducing a pair of long-bladed polypus forceps, Dr. Woods seized the foreign body and drew it towards the orifice. Finding this too small, he incised the posterior wall of the urethra with a probe-pointed bistoury, when he succeeded in removing the mass of beads. Again introducing the sound, he found a single bead still remaining, which he removed.

The patient recovered readily from the influence of the chloroform, and, a pad and bandage being applied, with a catheter in the urethra, was placed in bed. No untoward symptoms followed; the leakage of urine by the artificial opening ceased in a couple of days, and in two weeks he was ready to go to work.

* In the tibia resected by the present writer, the medullary tissue at the point sawn through showed no trace of osteomyelitis; but the rest of the medullary cavity was not opened, in order not to spoil the specimen.

PILCHER ON TRACHEOTOMY AS A PRELIMINARY TO EXSECTION OF THE SUPERIOR MAXILLA.—Dr. L. S. Pilcher, in some remarks on tracheotomy made before the King's County Medical Society at Brooklyn (*New York Medical Record*, November 20) remarks that in operations involving the cavities of the mouth and nose, attended with profuse hæmorrhage, tracheotomy presents itself as a measure preliminary to the more important surgical procedure, whereby the special terrors and difficulties of such operations are removed. He relates a case of tumour of the superior maxilla, in which he operated.

The patient was a lady, over sixty years of age. Less than six months had elapsed since any trouble about the face had been noticed. The external deformity was but slight. At the earnest request of the patient, the operation was undertaken. Tracheotomy was performed as its first step, and during the remainder of the operation, ether was administered through the tracheal cannula. As the operation progressed, the disease was found to be far more extensive than had been expected. The entire superior maxilla, with the palate, the lateral mass of the ethmoid, and the body of the sphenoid were infiltrated with, or largely replaced by, encephaloid material. It was impossible to remove all without opening the cavity of the cranium, short of which only Dr. Pilcher desisted. Troublesome hæmorrhage was experienced only from the posterior palatine artery. This was quickly controlled by the galvanocautery. The patient rallied from the operation, and lived for more than a month, finally succumbing to cancerous disease of the liver.

This method of procedure was adopted by Dr. Jas. L. Little, of New York City, last winter, in operating for removal of a large fibroid tumour, occupying the posterior nasal and the upper pharyngeal region, with brilliant success.

[The author appears to be unaware (except perhaps through hearsay) of the ingenious device of Dr. Trendelenburg, of Berlin, for performing tracheotomy and plugging the upper end of the air-tube in cases of operation on the mouth.—*Rep.*]

BAUM AND ROSENBAACH ON SUCCESSFUL SUB-HYOIDEAN PHARYNGOTOMY FOR ROUND-CELLED SARCOMA OF THE GULLET.—Dr. J. Rosenbach, assistant at the Polyclinic in Göttingen, communicates a remarkable case, of which an abstract is given here, to the *Berliner Klinische Wochenschrift* of September 20 and 27, 1875 (nos. 38 and 39). He remarks that subhyoidæan pharyngotomy was first introduced by B. von Langenbeck. It is true that Vidal de Cassis and Malgaigne had proposed the operation before. Though both of them claimed it as their own, neither of them did it in the living subject; indeed, Malgaigne called it a kind of laryngotomy, whilst in fact the pharynx is opened above the larynx. Luschka and Richet both rectify this mistake, and give the proper name of subhyoidæan pharyngotomy to Langenbeck's operation. The operation was first done in hospital at Tahiti, by a French naval surgeon; by this means a fibrous new growth of the epiglottis and pharynx was removed from a tuberculous American. In nos. 2 and 3 of the *Berliner Klinische Wochenschrift* for 1870, B. von Langenbeck details five cases of this operation, two of which were done by himself. His first case (closely following Prat's, which was really first) required a very large pharyngeal wound. This he justifies by experience of suicidal self-inflicted

wounds, which often do well. He gives most precise and accurate details as to the operation and its surgical anatomy. But since Langenbeck's publication, it has very seldom been performed. One case for a foreign body is reported by Dr. Lefferts (*Wiener Wochenschrift*, no. 7, 1875). It may be a question whether the operation is done so often as it deserves to be. Dr. Rosenbach believes that the case in which Professor Baum lately performed this operation deserves to be recorded, not only for its favourable termination, but for other reasons.

H. Mucker, aged forty-five years, a native of the grand duchy of Oldenburg, had healthy parents; was married, and had six healthy children. He was a large, tall, powerfully built man, but had always been rather thin. His mother is alive, aged seventy-six, in good health. His father is said to have died at sixty, of 'gastric catarrh.' The patient had been a labouring forester, but through good conduct became a sort of foreman. He attributed his complaint to catching cold in his work. He mentioned particularly a dry feeling in the right side of his throat. A sweating-cure and camomile tea relieved the hoarseness and the pains in his neck, but the feeling of a foreign body in the throat remained. He could swallow and breathe well, but this feeling of something not belonging to him being in his throat grew stronger and stronger. About Christmas dry food could not be swallowed. The voice began to be affected in January, speech being arduous. At the end of February he spat up a bit of reddish 'tumour,' about half the size of the tip of the thumb. This gave temporary relief. But in March he became worse and worse. He could only take liquid diet. For eight days he had only taken milk, and that with difficulty. He was greatly emaciated. His voice had almost gone, and sounded as if his mouth was quite full. For fourteen days past respiration had been difficult; indeed, for eight days he was forced to keep his bed, as the least movement increased his dyspnoea. He could only breathe tranquilly when perfectly still. His sleep was disturbed by dreams, in which he fancied himself at work, and the movements he made or imagined brought on feelings of suffocation. Sometimes sudden movement brought on vomiting, which gave temporary relief. Dr. Duweliuss, of Vechta, was consulted, and sent the patient to hospital, after making the diagnosis of tumour of the pharynx. The journey brought on such suffocation and fierce delirium as to be nearly fatal.

On May 3, 1875, he was made an in-patient. His breathing was noisy and difficult; his voice whispering. Swallowing was very difficult; but after a long time he swallowed half a tumbler of water. On depressing the tongue, an irregular swelling of some size, covered with whitish mucus, projected over the back of the tongue. Exploration with the finger stopped his breathing so much, that Professor Baum did tracheotomy at once. The opening was made between the cricoid cartilage and the thyroid body, and a silver cannula inserted at once. After the tube was introduced there was a stoppage in his breathing, apparently from spasmodic expiration-movements. But regular breathing soon commenced. By means of an œsophageal tube, about thirty-five ounces of milk were given him. An attempt, with Muzeux's forceps, to drag away the tumour through the mouth failed; though a good piece of broken-down tumour was thus extracted. Next day a more careful exploration was possible;

and showed the upper surface of a reddish, irregular tumour, covered with a whitish crust in spots, stretching over the back of the tongue, and apparently about the size of a walnut. On depressing the tongue more, it was seen to be much bigger, and had several outgrowths and processes. Externally, the neck showed little abnormal; yet the interval between the larynx and the hyoid bone appeared considerably too great. The salient angle of the upper margin of the thyroid body, beyond the central notch in front, was $1\frac{7}{12}$ inch (four centimètres) from the lower edge of the hyoid-bone, when the head was very slightly bent back. This space also felt fuller than usual. There were no enlarged glands. The exploring finger proved the visible part of the tumour (when the mouth was open) to be only a part of a larger mass. It projected somewhat on the right side. The longest finger failed to reach the lower border of the mass, and at the same time failed to reach the aperture of the glottis. The tumour felt everywhere soft and uneven. No attachment could be felt, except at the back of the pharynx at the level of the os hyoides, where, in the horizontal direction, it seemed adherent for about $\frac{1}{2}$ of an inch. A second attempt with Muzeux's forceps failed to remove the tumour, though portions were torn off and pronounced by Professor Krause to belong to a round-celled sarcoma. The laryngoscope did not much assist in the exploration. Some further attempts were made with forceps; but on May 15 the operation of subhyoidan pharyngotomy was determined upon. Before operating, the common cannula in the trachea was changed for a modified Trendelenburg's tampon-cannula. [A figure, and long description of this, is given in the text. It may be briefly described as the addition to the ordinary silver cannula of a membranous outer envelope (*Condom*) made of intestine, and connected with an India-rubber tube, so as to admit of easy inflation and thus to plug the trachea efficiently. The modification consists in attaching a little balloon or bladder to the end of the tube, and then putting another piece of tubing on firmly at one side of the tube (so that the elastic tube has two branches, like a Y reversed), through which to inflate it. A spring clip, or pinch-cock, familiar to those employed in volumetric analysis, closes or opens the extra tube at pleasure. The tension of the air in the tracheal plug can thus be judged of at once, by looking at the little balloon or bladder which hangs round the patient's neck or lies on his bosom ('quasi puero in collo pendeant crepundia,' *Miles Gloriosus*, act v. sc. 1).—*Rep.*] Trial was made some days before the operation, whether the patient could bear this tampon-cannula, and whether narcosis could be easily induced. Both were found practicable, though violent coughing and expectoration of mucus necessitated the removal of the chloroform several times. This was, however, greatly due to the patient's excitable disposition. But he was soon well narcotised. His head was allowed to hang down, bringing the seat of operation on a level with the windpipe. The skin was divided to the extent of three and a half inches, immediately below the hyoid bone. Then, by means of two pairs of forceps, the anterior fibres of the thyro-hyoid membrane, and some subcutaneous tissues, were torn across. Two little cutaneous arteries spouted, and were at once compressed. Then the sterno-hyoid and thyro-hyoid muscles were divided, and more and more of the thyro-hyoid membrane

cut through. Then Professor Baum, deviating from Langenbeck slightly in order not to wound the epiglottis, pushed a silver catheter over the back of the tongue so that its point hitched in the fold between the epiglottis and the tongue, and so pressed the mucous membrane (with the yet undivided layer of the thyro-hyoid membrane) forwards, and cut both through upon the catheter. It was, however, not enough torn apart, but was pushed forward from the mouth with the index-finger, and again torn by forceps, and well dragged to opposite sides. The epiglottis was seized with a sharp hook, dragged forward, and held with fenestrated forceps. Now, the mucous membrane being put well on the stretch, the hyoid bone dragged up, and the epiglottis drawn down, the pharynx was well exposed. One lobe of the tumour already protruded. It was pinkish, soft, almost transparent, and much like a common nasal polypus. It was found to be lobulated, and was now easily seized, and removed with the fingers. Only on the right side, a somewhat tough portion about $\frac{7}{12}$ inch broad, and $1\frac{1}{4}$ to $1\frac{5}{8}$ of an inch in length remained, attached below somewhat firmly to the œsophagus. It was quite on the right side and lower part of the pharynx. The mucous membrane was almost all severed as far as the lateral thyro-hyoid ligaments. There was a good deal of hæmorrhage, and some blood was swallowed. But breathing was never interfered with, and no blood was ever expectorated. It was thought better to ligature the stump or pedicle, which was accordingly done with three ligatures, whose ends were brought out of the mouth and attached to the right ear. During the operation the epiglottis was slightly injured, partly from the forceps employed to seize it. The cutaneous wound was now brought together by deep sutures. The various portions of the tumour were not put together and weighed as they ought to have been. The bulk was about that of a common (fowl's) egg. The structure was that of a round celled sarcoma, the separate cells of which were from 0.009 to 0.021 millimètres in their largest diameter ($\frac{1}{266}$ to $\frac{1}{125}$ of an inch English). The smaller cells were quite round, the larger somewhat oval, yet so that the longer diameter was never twice that of the shorter. The nuclei were somewhat large, dark, and coarsely granular. In the recent state it was difficult to make out nucleoli; by chromic acid hardening one or two nucleolar particles were seen. The nuclei measured from 0.006 to 0.018 millimètres ($=\frac{1}{400}$ to $\frac{1}{140}$ English inch) in their greatest diameter—they were round in the round cells, oval in the oval ones. The nuclei were surrounded by a little clear non-granular protoplasmic material. In the firmer portions of the tumour many fibres of connective tissue traversed the cell-masses. In the softer parts the cells were heaped up with but little connecting-substance. In the softest spots, on the summit of the lobes, the naked eye could see numerous puncta, of the size of a grain of sand, in the sections. These were found by the microscope to consist of spaces containing a fine fibrillar network—doubtless due to coagulation of the original fluid contents of the tumour—of solitary round cells, either like lymph-corpuscles or like the cells of the rest of the tumour; and of some larger, paler, irregularly stellate cells, whose processes (*Ausläufer*) were continuous with one another and with the blood-vessels. They were much like the cells of mucous membrane. Lastly, there were in some of these spaces perfectly spherical plasma-corpuscles, some of which contained

granules. Many of the spaces contained vascular networks of larger and smaller vessels. The surface of the tumour was covered with squamous epithelium. The tumour must, therefore, be regarded as a polypoid round-celled sarcoma, whose basis consisted partly of firm connective tissue, and which had imbedded in it, in prominent parts, many portions of mucous membrane. The patient's recovery was interrupted by scarcely any bad symptom. Next day the tampon was obliged to be renewed, on account of its bursting. A little milk got into the trachea; but was coughed out through the tube. The wound was dressed with salicylic acid wadding. On May 22 the patient could swallow minced meat. On the 24th the tampon-cannula was removed. The sutures were removed next day. On May 30 both wounds were closed—viz. that of the tracheotomy and that of the pharyngotomy. On May 31 the patient was discharged cured—sixteen days after the operation.

W. BATHURST WOODMAN.

RECENT PAPERS.

- A Peculiar and Painful Affection of the Fourth Metatarso-phalangeal Articulation. By Dr. Thomas G. Morton. (*American Journal of Medical Sciences*, January, 1876.)
- Contributions to Operative Surgery. By Dr. Jos. C. Hutchison. (*Ibid.*)
- On the Treatment of Ununited Fracture by 'Pressure and Motion,' with Cases. By Dr. Henry H. Smith. (*Ibid.*)
- Remarkable Case of Traumatic Hypertrophy (including Elongation) of Digital Phalanges. By Dr. J. A. Lippincott. (*Ibid.*)
- Occlusion of the Popliteal Artery, with establishment of the Collateral Circulation. By Dr. J. A. Wyeth. (*Ibid.*)
- Wounds, in Relation to the Instruments which produced them. By Dr. Macewen. (*Glasgow Medical Journal*, January, 1876.)
- Division of the Isthmus of the Thyroid Gland to relieve Dyspnoea in Bronchocele. By F. H. Hamilton, M.D., LL.D. (*New York Medical Record*, January 1.)
- Urethro-Rectal Fistula produced by the Forcible Introduction of Sounds. By E. Frankel, M.D. (*Ibid.* January 8.)
- Fracture of the Internal Malleolus with Dislocation of the Ankle-Joint. By Dr. P. A. Bissell. (*Ibid.* January 15.)
- Report of a Case of Perityphlitic Abscess in the Ileo-cæcal Region, treated successfully by the early establishment of an external Opening in the Abdominal Walls for the Escape of Pus. By Dr. Gurdon Buck. (*Ibid.* January 15.)
- On Subperiosteal Extirpation of the Calcaneum, and its Definitive Results. By M. Ollier. (*Lyon Medical*, January 16, 1876.)
- Note on the State of the Nerves in Perforating Ulcer of the Foot. By M. Michaud. (*Ibid.* January 2, 1876.)
- On Salivary Calculi. By M. Richet. (*La France Médicale*, January 8, 1876.)
- Hydatid Cyst of the Abdomen in a Child aged seven. By Dr. Archambault. (*L'Union Médicale*, January 22, 1876.)

MATERIA MEDICA AND THERAPEUTICS.

HOLMES ON GELSEMIUM SEMPERVIRENS.—The *Pharmaceutical Journal* for December 18, 1875, and January 1 and January 15, 1876, contains an useful *résumé* by Mr. E. H. Holmes of what is known regarding Gelsemium Sempervirens.

The plant was first used by the 'Eclectic' practitioners in America, its properties having been discovered by an accident which is narrated in the *Eclectic Dispensatory*. It was first brought into notice in the *American Journal of Pharmacy* in 1852, by Professor W. Proctor, but does not appear to have been sufficiently well known or esteemed in 1855 for introduction into the *United States Phar-*

macopœia published in that year. In the subsequent edition of that work, published in 1864, it appeared in the secondary list; and in 1873 it was considered of sufficient importance to be placed in the primary list of *materia medica*.

The plant has received several scientific names, and is at the present day placed in different natural orders by different authorities on systematic botany. In the *United States Pharmacopœia* the name Gelsemium Sempervirens is adopted, and Gray's *Manual of Botany* is the authority referred to.

The plant is commonly known in America as the yellow, wild, or Carolina jessamine, and also as woodbine. It grows wild on rich clay soil near small streams along the sea-coast from Virginia to the south of Florida. In Florida it flowers in March, but further north not until May or June. The pedicels underneath the flowers are covered with a number of small imbricated bracts.

The generic names Gelsemium and Gelseminum are often used indiscriminately, and thus confusion and doubt as to the plant spoken of are caused. The name Gelsemium is preferable for this reason, and also because it is the name adopted in the *United States Pharmacopœia*. It is, also, the one generally accepted by botanists in this country. The plant is not a true jessamine, and it is rather unfortunate that it should be often called the yellow jessamine in America, since there is a true jessamine with yellow flowers which is often found in cultivation.

The part of the plant official in the *United States Pharmacopœia* is the root. As met with in English commerce it occurs in two states—either in packets, prepared by the Shakers of New Lebanon, which contain the root in small pieces formed into a compact mass by hydraulic pressure, and in which state it is difficult to powder; or it is sold simply cut up into pieces varying from two to eight inches in length, and one-third to three-quarters of an inch in diameter. It is frequently mixed with about half its bulk of long wiry pale brown rootlets.

The so-called Gelsemium root consists chiefly of subterranean stem with a small proportion of true root; occasionally a slender piece of the aerial stem may be found intermixed, and is readily distinguished by its purplish colour and hollow centre, and by the silky or tow-like fibre, rendered visible when the epidermis is peeled off. The true root is hard and woody, slightly undulated in outline, very sparingly branched except in the slender pieces, externally of a pale brown colour, nearly smooth, and furnished with a thin scurfy cuticle which is slightly cracked longitudinally. When a transverse section is examined with a lens the bark of the root is seen to be very thin, and to consist of two layers—the inner one being usually almost as pale as the woody portion and of somewhat soft texture, the outer one is darker and more compact.

The medullium, or woody portion of the root, occupies nearly its whole diameter, is of a pale yellowish white colour, the yellow tint becoming much more distinct when the root is wetted. The medullary rays are white and very distinct, and the woody tissue between the rays is very porous; the pores being very small, but visible to the unaided eye, especially when the root is broken instead of cut. There is no pith or central cavity in the root.

The root has a bitter taste and pleasant flavour, and an odour somewhat between those of senega and green tea; this is more readily perceived in the tincture.

The subterranean stem is also furnished with rootlets, but is easily distinguished from the root by the presence of a small dark coloured central cavity representing the pith, and by the external surface being rougher and frequently variegated with dark longitudinal lines, which are the remains of the same purplish cuticle which presents so marked a feature in the aerial stem. The bark is thicker than that of the true root, and the inner layer is usually dark brown. If the subterranean stem is broken slowly and carefully a thin row of silky fibres projects fully a quarter of an inch from the broken edge. These fibres do not appear when the bark of the root is broken, and thus serve to distinguish the stem of this drug from the root. Experiments as to the relative value of the bark of the root and stem are wanting. The bark of the stem has the same bitter taste as that of the root; and if it be hereafter shown that it is equally active, the above character of the presence of scattered strong fibres, taken in conjunction with the flavour of the drug and its porous structure, will serve to distinguish it from all other roots or stems used in materia medica.

In this country Gelsemium has been used principally in the form of tincture. It has been found effectual in relieving neuralgic pain in the teeth and jaws, particularly when arising from decayed teeth. According to Dr. Mackey, it is especially beneficial when the pain occurs in parts of the face supplied by branches of the fifth nerve. Similar results have been obtained in Germany. In America it is largely used as a remedy in fevers, particularly those arising from malaria; in such cases it is often given in alternation with quinine. In minute doses it has been recommended in inflammatory and irritable conditions of infant life. It has also been used with success in dysmenorrhœa, in after pains, in spasmodic stricture of the urethra, in hysteria, and spasmodic croup. In traumatic tetanus it has been tried with the result of the death of the patient in six hours afterwards from paralysis of the muscles of respiration.

Gelsemium appears to be chiefly valued in America for its power in controlling nervous irritability in fevers, in which it is said to excel any other known agent. According to Dr. Bartholow, it corresponds more nearly in its action to conium than to any other agent. He also states that the action of Gelsemium is not practically antagonistic to that of strychnia or Calabar bean, and that the dilatation of the pupil caused by gelsemium is due to a paretic state of the circular fibres, and not to contraction of the radial fibres of the iris as is the case with atropia, and that it is not overcome by the application of extract of Calabar bean. From this it appears possible that gelsemium may prove of some service to the oculist in the form of a local application.

That this drug is a powerful poison there can be no doubt. The dose which has proved fatal, however, appears to vary with the age and constitution of the individual. Dr. J. N. Freeman, of New York (*Lancet*, 1873), mentions the following: Fifty minims of a tincture, consisting of four ounces of the root to a pint of diluted alcohol, proved fatal in two hours to a boy three years of age. Another boy three years old died in five hours, having taken in that time two doses of ten minims of the tincture. In a third case, in which two drachms of the tincture were given to a girl nine years of age, death ensued in two hours. In the last two cases the strength of the

tincture used is not recorded, and in the second case each dose was given with one and a half grains of sulphate of quinine. In the *American Journal of Pharmacy* (1870) a case is recorded in which a single dose of three drachms of the fluid extract proved fatal to a female adult in seven and a half hours. In another case alluded to in the *Practitioner* of October 1870, the administration of the drug proved fatal in two and a half hours.

According to Fredigke, the symptoms by which its effects manifest themselves in the animal economy seem to indicate that its energy is primarily exerted on the cerebro-spinal centres, and secondarily on the respiratory apparatus and the heart, the functions of the former ceasing before those of the latter. The symptoms are effectually counteracted by diffusive stimulants, such as strong cognac or whisky, given in doses of two ounces or less every hour, according to circumstances. All the symptoms will disappear after about two hours, leaving no unpleasant effects or derangement of the system.

The preparations which are used in medicine are the tincture, fluid extract, and gelsemin.

The 'fluid extract' is the only preparation official in the *United States Pharmacopœia*. It is made in the following manner:—

Take of—

Gelsemium root in very fine

powder 16 oz. (troy).

Alcohol (sp. gr. 0.835) . . . a sufficient quantity.

Moisten the powder with four fluid ounces of alcohol and pack it in a suitable percolator. The surface of the powder is then to be covered with a disc of paper, and the remaining portion of sixteen fluid ounces of menstruum is to be poured upon it. When the fluid begins to drop from the percolator close the lower orifice with a cork, and having closely covered the percolator to prevent evaporation set it aside in a moderately warm place for four days. The cork is then to be removed, more menstruum is to be gradually poured on, and the percolation continued until twenty-four fluid ounces have been obtained. Of these, the first fourteen fluid ounces are to be reserved, and the remainder having been carefully evaporated to two fluid ounces is to be mixed with the reserved portion and filtered through paper (if necessary). From this formula it will be seen that each ounce of the fluid extract represents an ounce of the root.

There is at present no recognised formula for the 'tincture.' The one given in the *American Dispensatory* consists of four ounces (troy) of the fresh root, cut into small pieces, to one pint of dilute alcohol. The pint used in the United States is officially only sixteen fluid ounces, hence this tincture is of the strength of one in four nearly. As the root probably loses nearly half its weight in drying, the quantity of fresh root ordered will be about equivalent to two ounces of the dried root, or one part in eight of proof spirit. Dr. J. N. Freeman, of New York, in a letter to the *Lancet*, speaks of a tincture of the strength of four ounces of the root to a pint of dilute alcohol. Drs. Sawyer and Mackey, of Birmingham, in a communication to the *British Medical Journal*, recommend a tincture made of the strength of two ounces of the dried root in coarse powder to two pints of rectified spirit. In London three of the leading houses in the drug trade prepare it in three different strengths—one using four ounces, another two and a half ounces, and another two ounces of the dried root to the pint

(twenty ounces) of proof spirit ; and other formulæ are used at University College and St. Bartholomew's Hospital.

From a comparison of the formulæ it appears that a tincture of the strength of two ounces (avoir.) of the dried root to sixteen ounces or twenty ounces of proof spirit is most generally used in this country.

A formula that shall reconcile the differences in the various formulæ used, that will not interfere with the one used by the majority of chemists, and that will enable those who use a stronger tincture to reduce it to a strength uniform with that generally used, is evidently an object to be attained. With this view the following formula is proposed :

Take of—

Gelsemium root (dried) reduced to coarse powder	2 ozs. (avoir.)
Proof spirit	20 fluid ozs.

Make the tincture by percolation, by the general process ordered in the *British Pharmacopœia* for preparing tinctures. An ordinary funnel answers very well as a percolator if a small plug of cotton wool be placed in the tube and covered with a layer of silver sand about one inch in depth, and if another layer of sand about half an inch in depth be placed on the top of the substance to be operated on.

Gelsemin is a preparation which is used chiefly by the Eclectics. It is prepared (according to Dr. Bartholow) in two ways, either by evaporating the tincture or by precipitating it with water. It must, therefore, evidently consist of the resin of the root with varying proportions of the active principle.

Of the powdered root, according to Dr. Sawyer, one to two grains is the dose. According to Dr. Tully, ten to fifteen grains have proved fatal to a child twelve years of age.

Of the dose of the fluid extract there is not any official statement in the *United States Pharmacopœia*. Judging, however, from the statement that the dose of the powder is one to two grains, and from the fact that the fluid extract represents an equal quantity of the root, and also from disagreeable symptoms having been produced by ten minims, the dose of the fluid extract may perhaps be fairly estimated at five minims. For children, the tincture is a much safer preparation.

Of the tincture the doses which are reported to have proved successful have been twenty drops of a tincture composed of two ounces of the root to sixteen ounces of proof spirit, given every three hours to adults ; and of the tincture made from two ounces of the root to twenty ounces of the spirit, fifteen minims administered in the same way. These doses have been given chiefly in neuralgic pain in the jaws and teeth, which have been cured within twenty-four hours.

KEYES ON THE EFFECTS OF MERCURY ON THE BLOOD OF SYPHILITIC PATIENTS.—Dr. E. L. Keyes read a paper on this subject before the New York County Medical Society, December 27, 1875 (*New York Medical Record*, January 8, 1876). His observations had special reference to the effect produced upon the number of red blood-corpuscles by the administration of mercury in the treatment of syphilis. With regard to the value of mercury in the treatment of syphilis, Dr. Keyes assumes the following position ; that syphilis is most surely controlled, and most often cured, by the unremitting use of small doses of mercury, just enough to restrain the symptoms without producing any conscious physiological effects, and continued for not less than

two years. The drug may be pushed if symptoms seem to require it ; is often continued for more than two years, and may be assisted by iodide of potassium. The opinion was expressed that when a syphilitic patient in fair health is treated in this manner from the period of his first eruption, he may be so cured that he will have but one general eruption, and no serious lesion subsequently ; that the health of such a patient will be as good after as before such treatment, and that the exceptions to the rule are not numerous. Reference was also made to the statement of Liègeois that small doses of corrosive sublimate increase the weight of healthy men or animals, and this conclusion was sustained by the clinical observations of Dr. Keyes. Dr. Keyes's experiments extended over six months, and were made upon persons in health, hospital patients, and patients in private practice. The blood was taken from twenty-seven individuals, of whom six were apparently sound, and twenty were syphilitic. Three hospital cases were used. The blood was counted 101 times, and from five to ten counts made each time. Dr. Keyes was assisted by Dr. A. L. Stimson, and observations on the following points were noted. 1. Average of red corpuscles in one cubic millimetre of blood of a healthy adult man—a high average is five millions. Anæmia rarely goes below three millions, and in five instances the count reached above six millions. 2. Effects of small doses of mercury on the blood early in syphilis. In all the cases counted, the number of red corpuscles increased under the influence of mercury, food, hygiene, and tonics. 3. Effect of long-continued use of small doses of mercury upon the blood in syphilis. There were three cases ; the drug was administered respectively eleven, six, and eighteen months ; the blood count was above the healthy average, and clinically they were all in excellent health. 4. Effect of mercury in excess on the blood in syphilis. In this, the only case in which salivation had been present (produced for special reasons), the count showed a loss of one million, attributed to the excessive use of mercury. 5. Effect of mercury combined with iodides on the blood in syphilis. In only two out of the nine cases under this head did the average count fall below the normal standard, and this among patients who had had syphilis for a long time. 6. Effect of mercury on the blood in syphilis in hospital cases. Three cases. One entered salivated, and the count increased after he began to eat. One showed a wretched count, being debilitated by disease and hospitalism, but improved under good hygiene and tonics, and it is believed the mercury helped him. 7. Effect of small doses of mercury on blood of individuals not syphilitic. The observations showed an increase in the count. The following conclusions were arrived at. 1. Mercury decreases the number of red corpuscles when given in excess, especially in hospital patients. 2. Syphilis diminishes the number of red corpuscles below the healthy standard. 3. Mercury in small doses, continued for a short or long time in syphilis, alone, or with iodide of potassium, increases the number of red corpuscles and maintains a high standard of the same. 4. Mercury in small doses acts as a tonic upon healthy animals, increasing their weight. In larger doses it is debilitating or fatal. 5. Mercury in small doses is tonic (for a time at least) for individuals in fair health not syphilitic. In such individuals it increases the number of the red corpuscles.

W. DOUGLAS HEMMING.

FRÄNTZEL ON THE TREATMENT OF ACUTE RHEUMATISM.—Dr. Fräntzel (*Charité Annalen*, Berlin, 1876), after having tried the various methods by propylamine, large doses of alkalies, and purgatives, has found his best results from following the practice of Davies in applying blisters in the neighbourhood of the affected joints. He orders strips of cantharides plaster, three fingers broad, to be applied round the limbs, two inches above the wrist, elbow, knee, and ankle joints, and below the shoulder and hip joints, so as to avoid blistering those portions of the body which press most directly on the bed. He afterwards gives a subcutaneous injection of morphia to procure sleep; in the morning he cuts the blisters and bathes them with warm water, and puts on warm-water compresses; in the evening these are removed, and the parts dressed with simple ointment. By that evening, or often by the morning, a remarkable improvement takes place in the condition of the joints, with diminution of swelling and pain; the fever abates, and often the temperature falls to below normal; 'only in those cases in which the joint-affection is not well pronounced, do the blisters remain without influence in the height of the temperature.' In cases in which four or more blisters have been applied, a certain degree of strangury or anuria is the result, and the urine contains blood-corpuscles, with hyaline and granular tube-casts, but this passes off in from one to four days, without leaving a trace. He protests against the idea that this method of treatment causes much suffering to the patient, for if half a grain of morphia be injected the pain resulting is very slight.

MACKENZIE ON THE TREATMENT OF WOUNDS.—Dr. A. C. Mackenzie, in the *American Journal of Medical Sciences (Medical and Surgical Reporter*, November 27), states that he treats wounds with much success with warm water and a balsamic compound. The warm water not only hastens the exit of disintegrated material, but conveys to the sufferer that soothing effect which heat alone communicates. The formula which he uses is the following.

B. Balsam fir,
True Venice turpentine,
Oil of sweet almond, aa ʒij
Add carbolic acid ʒss. previously dissolved in ʒij warm glycerine. M.

Apply with a flat camel's hair brush, and inject into the interstices of the wound with a glass syringe, having previously cleansed the wound with very warm water and a bulb-syringe.

Warm water is applied *ad libitum*, and the diseased or injured portion enveloped in flannel cloths, immersed in water as hot as can be borne comfortably.

GILL ON THE TREATMENT OF PRURITUS VULVÆ BY NITRATE OF ALUMINA.—In a note in the *St. Louis Medical and Surgical Journal* for December, Dr. H. Z. Gill says that in cases of pruritus vulvæ, whatever the cause may be, the nitrate of alumina has given more satisfaction than any other remedy or combination he has prescribed in a number of cases. The form in which he has used it is from four to six grains to the ounce of soft water, as a vaginal injection, or external wash. He ordinarily directs the patient to take a teaspoonful (beginning with rather less at first) of the powder, put it into a pint or a pint and a half of soft water, and use as a wash, or vaginal injection once, or if necessary, twice

a day. In hot weather it may be needed twice a day.

TREATMENT OF CHRONIC BRIGHT'S DISEASE.—In notes of practice and peculiarities of treatment at the Bellevue Hospital (*New York Medical Record*, January 1), the following plan of treatment is recommended in cases of chronic Bright's disease.

The patients should abstain as much as possible from meat. Milk should be substituted for meat, and should be associated with lime. Butter may be used; eggs if they agree, and fresh fish in the morning. Fried fats should be carefully excluded, but cream may be taken without stint. Vegetables and fruits are always good, but those should be selected which contain the least amount of woody fibre. Rice and potatoes, therefore, may be used, but asparagus, turnips, cabbage, and notably beans, which contain woody fibre in large quantities, should be assiduously avoided. Onions may be eaten with impunity, and are rather beneficial.

For the anæmia, iron should be administered from first to last, and by preference, the tincture of the chloride. This preparation is assimilated with difficulty; hence it should not be given alone, but combined with nux vomica, and to this spirits of nitre may be added to assist the determination towards the kidneys. For example, ten drops of the tincture of the chloride of iron, ten drops of tincture of nux vomica, and one drachm of sweet spirits of nitre may be given three times a day.

Cod-liver oil increases the red corpuscles of the blood, because it is digested by the liver, and the product enters into them as an ingredient. The irritability of the stomach may make it troublesome to take, but it should be relied upon as much as in the treatment of phthisis.

To combat the disease itself, one agent may be regarded as a specific against increase of connective tissue in the body, wherever the interstitial inflammation may occur, and that is the bichloride of mercury. It should be given in small doses (one-twentieth of a grain) and should be combined with a diuretic. For example, one-twentieth of a grain of the bichloride, one grain of digitalis, and one grain of quinine may be given three times a day, with the result of producing a specific action upon the kidneys, and will raise the specific gravity of the urine.

Attention to the condition of the skin will materially assist the embarrassed kidneys, and to do this we may have recourse to two things. If excessive oedema be present, the pressure produced shuts off the circulation to a great extent, and prevents removal of the fluid by diaphoresis. It is much better then to make punctures in the distended skin of the legs, and let the water drain away at once. No apprehension need be had with reference to this trifling operation, if the limb, when the punctures have been made, be wrapped with cloths wet in a solution of carbolic acid in water, to which has been added essence or oil of cinnamon. The latter is to correct the smell of the carbolic acid, and is equally antiseptic.

The second thing is, to rub the patient all over once a day with sweet oil. If extra diaphoresis be desirable, it can be best obtained by placing a blanket in an empty bucket, pouring hot water upon it, for in this way much less water is required, and then wringing it out and quickly applying it around the body and covering it with a dry blanket. The skin should be well oiled before the blanket is applied.

TREATMENT OF GANGRENE BY SALICYLIC ACID.—In some notes of practice at St. Francis's Hospital in the *New York Medical Journal* for January, it is stated that Dr. N. G. McMaster has used salicylic acid as an application to gangrenous surfaces, with marked benefit in keeping down the intolerable odour. One case, particularly, was satisfactorily treated in this way. Bromine had first been applied, then carbolic acid, then poultices of charcoal, but the odour was nevertheless sufficient to exclude the patients from the ward. The salicylic acid in powder was then either dusted on the surface or blown into cavities, as necessity indicated. After the thorough use of this agent, the offensive odour was completely controlled.

SCHUMACHER ON THE THERAPEUTICS OF MIGRAINE.—The *Berliner Klinische Wochenschrift* of January 7, 1876, contains a paper by Dr. Schumacher (II.), of Aix-la-Chapelle, on the pathology and treatment of migraine. He remarks that it is very difficult to find out the real nature of this disease. Romberg considered it a neurosis of the fifth nerve. Du-Bois Reymond and Brunner, from personal experience, regarded it as a tetanic or spasmodic condition of the cervical sympathetic, and of the smooth circular fibres of the muscular coat of the vessels. Möllendorf, on the contrary (himself a sufferer from the complaint), taught that the disease is due to a paralytic condition of the sympathetic, through which the vessels of the affected side are considerably dilated, and become overfull of blood, which gives rise to extremely painful sensations on the part of the sensory nerves of this region. The effect of remedies may give us some insight into the real pathology. On Du-Bois Reymond's hypothesis, antispasmodics will do most good. Amongst these, nitrite of amyl holds the first place. If we accept the opposite idea of a paralytic condition, our range of remedies is more restricted. Ergot of rye, however, ought to be a potent agent in such a condition. The following case shows that it is so. Mrs. St.—, aged forty-nine, is of slender build, and suffers from long-standing cyphosis, most marked on the left side. She has cardiac hypertrophy (chiefly of the right ventricle), and has not menstruated since the beginning of 1874. Her pulse is weak, but the heart's sounds are clear, and its impulse is somewhat excessive, even when the patient is at rest. Ever since she ceased menstruating she suffers from time to time, chiefly at night, from violent palpitation of the heart, with feelings like angina pectoris. These attacks last one to six hours, and have been most quickly relieved by subcutaneous injections of morphia. Since the beginning of December, 1874, the patient has complained of violent attacks of pain in the right side of the head; these attacks awoke her in the middle of the night, and were best relieved by getting out of bed. There seemed no reason for these attacks. Bicarbonate of soda, rhubarb, iron, in the day, and morphia and chloral-hydrate at night, only gave partial relief. Towards the end of January she lost the palpitations, but her pulse remained quickened, and she complained of dyspnoea in walking quickly. But the pains in the head became worse and worse, still chiefly on the right side; beginning between 2 and 3 A.M. as a boring pain at the back of the head, which radiated towards the front; the pressure over the eyes being worst, with throbbing of the arteries of the right side, and abnormally increased warmth of the suffering parts, which could

be felt by the hand. She was forced to get out of bed, and found relief, especially if she took coffee, from the cool air of the chamber. Towards morning the pain and other symptoms gradually abated, leaving her (when seen in the morning) very prostrate, and with some injection of the conjunctivæ; this redness vanished in the course of the day. Quinine in large doses gave only temporary relief. She could only bear morphia in small doses, and these only relieved her for a time. The induced (interrupted) current was of no use. The constant current from 6-8 cells for eight or ten minutes at a time, through the mastoid processes, or from the top of the sternum to the mastoid process, so far relieved her that she seldom had an attack the same day she was galvanised, and sometimes went from two to four days without one. But after about three weeks of electrifying the attacks were as bad as ever. She was awakened about 2.30 A.M. with boring pains in the back of the head on the right side, with radiations towards particular branches of the fifth nerve (rami masseterici), strong pulsation of arteries, a great feeling of heat, rushing noise in the right ear, reddening of the right half of the face. Towards morning the pains declined. The pulse was but little affected. Watery extract of ergot had been given in small doses without avail in February, but in April 1875 watery extract of ergot was given in pills, in doses of $4\frac{1}{2}$ to 9 grains. After she had taken (in fourteen days) about 5 grammes [about 77 grains], the attacks, though nightly, were weaker, so that she could remain in bed—with exacerbations every second or fourth day. Of the second 5 grammes, about $13\frac{1}{2}$ grains, were taken daily in pills, with still more relief. As this dose seemed pretty nearly a maximum, it was maintained. After taking 27 grammes [about 416 grains] of extract of ergot, she was quite cured of her migraine about the middle of May. In the month of July cardiac dilatation succeeded the previous hypertrophy, and she became dropsical, but there was no return of the migraine. It is noteworthy that the urine was constantly normal, and not affected by the administration of the extract of ergot.

W. BATHURST WOODMAN.

RECENT PAPERS.

- Five Cases of Chronic Albuminuria treated successfully with Large Doses of Iodide of Potassium. By Dr. T. S. Sharpe. (*American Journal of Medical Sciences*, January, 1876.)
- Remarks on the Curative Treatment of Insanity by Subcutaneous Injections of Hydrochlorate of Morphia. By Dr. Auguste Voisin. (*Bulletin Général de Thérapeutique*, January 15.)
- On the Treatment of Cholera by Eserine. By M. Cadet de Gassicourt. (*Ibid.*)
- Climatology and Aerotherapy. By Dr. Sieffermann. (*Gazette Médicale de Strasbourg*, January 1.)
- On Silicate of Potassium in the Treatment of Erysipelas. By Dr. Alvarenga. (*La France Médicale*, January 8, 1876.)
- Observations on Antiseptics. By M. A. Béchamp. (*Montpellier Médical*, January, 1876.)

PSYCHOLOGY.

MERSON ON THE INFLUENCE OF DIET IN EPILEPSY.—In this investigation (*West Riding Asylum Medical Reports*) twenty-four chronic epi-

leptic patients were selected and subjected to observation under two different kinds of diet, the one consisting largely of nitrogenous matter, and the other containing no animal food, but consisting of milk, arrowroot, potatoes, butter, oatmeal and bread. Dr. Merson distinguishes the former as nitrogenous and the latter as farinaceous. The exact dietary adopted in each case was as follows. Nitrogenous—*Breakfast*: eight ounces lean meat; beef or mutton, three ounces bread, one pint coffee. *Dinner*: twelve ounces lean meat, beef or mutton, seven ounces bread, varied occasionally with fresh vegetables. *Supper*: four ounces bread, four ounces cheese, and tea. Farinaceous—*Breakfast*: eight ounces bread, three-quarters of an ounce butter, one pint coffee. *Dinner*: on two days of the week, one and a half pints arrowroot milk, containing two ounces arrowroot and three ounces bread; on two days, oatmeal porridge, containing three ounces oatmeal to each man, with a pint of milk; on the remaining three days, twelve ounces potatoes, one and a half ounces butter, three ounces bread, and half pint milk. *Supper*: same as breakfast, except that tea was substituted for coffee.

In both cases the quantity is considerably less than what is usually considered as the average diet necessary for a healthy adult with moderate exercise. In this case, however, the amount of exercise was limited.

Previously to commencing the above dietary, each patient was accurately weighed, and his physical and mental condition noted. Twelve of the patients under observation were then put on nitrogenous diet, the other twelve on farinaceous; and this arrangement was continued for four weeks, during which time their physical and mental conditions were closely observed from day to day, and the number of epileptic seizures accurately noted. At the end of four weeks the weights were again taken and the diet changed, those previously on nitrogenous diet being transferred to farinaceous, and those on farinaceous to nitrogenous. After another period of four weeks, during which the condition of the patients was from time to time noted and compared with that which had been observed in the previous period, the weights were again ascertained, and the patients allowed to resume their ordinary dietary.

The results obtained during those two months of observation are not such as to justify the conclusion that either of the two diets used possessed any decided advantage over the other in the treatment of epilepsy. A reference to the tables, however, shows that as regards the number of fits in individual cases, there is a slight balance in favour of the farinaceous system.

With regard to the effect of these systems of diet upon the mental and physical conditions of the patients under treatment, it was observed that, in a considerable number of those who took nitrogenous food during the first month, soon after commencing that diet they became much more dull and stupid than they had previously been, would sit in a dreamy listless manner for a great part of the day, were very slow and languid in their movements, and took little notice of what was going on around them. This condition remained more or less throughout the whole period of nitrogenous food, though it varied in intensity at different times. No relation was traced between it and the recurrence of the fits. As soon as the diet was changed to the farinaceous, it was remarked that the condition of mental hebe-

tude began to pass off, and in some of the cases the change was very remarkable. The improvement in the mental condition was not always accompanied by any marked diminution in the number of fits.

The general physical condition does not appear to have been appreciably affected by one diet more than the other.

The temperature presented great variation in individual cases, some cases having a higher temperature under nitrogenous food than under farinaceous, some giving an opposite result. Taking the average of the whole twenty-four cases, the morning temperature was 0.2° higher under nitrogenous food than under farinaceous, being 98.7° in the former, and 98.5° in the latter. The average evening temperature presented a similar difference, being 98.7° under farinaceous food and 98.90° under nitrogenous. This result is not what was to be expected, considering the composition of the diet in each case. The dynamic value of the farinaceous was somewhat higher than that of the nitrogenous—a fact, which *ceteris paribus*, should give a higher temperature in a period of farinaceous diet. This may have some connection with the condition of stupor, previously noticed as having occurred during the nitrogenous period.

The urine was examined in twelve of the cases. The amount of urea was, of course, much higher under the nitrogenous regimen than under the farinaceous, being in the former case 65.4 grammes for the period of three days, and in the latter 43.12 grammes. The salts, with the exception of the chlorides, were all considerably increased under the nitrogenous fare. The phosphates estimated as phosphoric acid (P_2O_5), gave an average of 6.72 grammes under farinaceous food, and 7.43 grammes under nitrogenous. Similarly the sulphates, estimated as sulphuric acid (SO_3), gave 4.74 grammes under farinaceous diet and 5.72 under nitrogenous. In accordance with the increased amount of urea and salts, the specific gravity was much higher in the urine collected during the period of nitrogenous food.

With regard to the influence of the two different kinds of diet on the actual number of fits, the table shows that out of twelve cases, there was in nine a decrease in the number of fits occurring during the four weeks of farinaceous food, as compared with the number during a similar period of nitrogenous diet. In some of these the decrease was very considerable. The average number of fits in each of these nine cases was 26.2 for the period of nitrogenous food, and 19.8 for that of farinaceous. Of the remaining three cases, one had the same number of fits in each period; another had one more under farinaceous regimen than under nitrogenous. In the third case, the number under farinaceous diet was more than doubled. This patient was, however, subject to periodic outbursts of fits; and the case cannot, therefore, be fairly regarded as telling against the farinaceous diet.

Dr. Merson thinks, after making due allowance for all circumstances likely to tell in the opposite direction, that there are fair grounds for the conclusion that a farinaceous diet is likely to be more useful in the treatment of epilepsy than a nitrogenous.

H. SUTHERLAND, M.D.

SHORT ATTACKS OF INSANITY.—Dr. J. A. Campbell relates (*Journal of Mental Science*, October, 1875) the particulars of three cases of short attacks of insanity. One was in a girl aged eighteen who

was admitted into an asylum in a state of hysterical mania, which passed off in less than a fortnight, the patient being discharged in a month. Another patient, a woman aged twenty-five, was admitted in a state of depression with great emotional symptoms without delusions. This passed off, and she was discharged in a fortnight owing to some informality, but she had quite recovered. A third was a gentleman, aged sixty-four, who was admitted in a great state of excitement with hallucinations of vision. He was discharged recovered in less than a month. Dr. Campbell, in connection with the question of discharging patients, asks these questions: How long should a patient be kept under observation in an asylum? What is the probability of the recurrence of the disease, and within what time? In what manner are the patient's home surroundings likely to affect him? The length of time for observation may, he thinks, be reduced to the shortest limits in the following forms: Puerperal insanity, the tendency being towards recovery; Insanity of drinking in the acute form, abstinence alone being necessary to recovery; Forms of insanity dependent on debility or starvation, where an improvement in the bodily and mental state has been coexistent; Cases of insanity dependent on functional derangement as hysterical insanity; Cases of recurrent mania, where the history shows a tendency to a short attack and a long remission. The probability of a recently recovered patient continuing well is greatly increased by his going to a well-ordered home. Many return because they have to contend with home difficulties and circumstances which would try the sanest person. Those who must be kept under observation are patients whose prominent feature has been melancholia, in whom impulsive actions have been noticeable, or in whom recurrence of maniacal attacks has been frequent and uncertain. The tendency at present is to discharge patients who might be better kept in an asylum rather than to retain those who ought to be outside.

G. FIELDING BLANDFORD, M.D.

LOCHNER ON TRAUMATIC SOFTENING OF THE SPINAL CORD WITHOUT EXTERNAL INJURIES.—No. 42 of the Munich *Aerztliches Intelligenzblatt* (October 19, 1875) contains the report of two cases of the above by Dr. Lochner of Schwalbach. The first case was a serving man, aged fifty-two, who was almost an imbecile. On May 23 last, when drunk, he was struck by a comrade, and fell backwards to the ground, with his back across a stone. After a quarter of an hour he could walk home, but was unable to pass urine, though there was much *ardor urinæ*. After some hours urine passed, but he could no longer retain it, and it dribbled from him. On account of this incontinence he was brought to the district hospital. The abdomen was much swollen. The bladder was high above the pubes, and in spite of the continued dribbling of urine, the catheter drew off 2,000 cubic centimetres (about three pints) of urine. The bowels had not acted for eight days. The right leg was much swollen up to the groin, and he could scarcely move it; it was very painful when it was moved for him. A dose of salts moved the bowels, but everything was passed in the bed unconsciously. From forty-five to sixty ounces of urine were daily withdrawn by catheter, and much dribbled away. He had enlarged prostate. The urine was pale yellow, slightly acid, and free from albumen. On June 19 hiccup

set in, he became comatose, and died on June 23, just four weeks after the fall on the stone. At the *post mortem* examination of the spinal cord, the external surface of the membranes was little altered; but corresponding to the eighth and ninth thoracic vertebræ, the whole cord was softened to a pulsatous consistence, so as to be easily washed away with a running stream of water. The bladder was much distended, and its mucous membrane reddened and covered with pus. The pelves of the kidneys and ureters were somewhat dilated. The prostate was much enlarged; its middle lobe was three quarters of an inch in diameter. There was pus in the left pleura, and circumscribed pneumonia at the base of the left lung, with commencing gangrene. The interesting point was, of course, the softening of the cord, corresponding to the site of the injury. The parts below this had been paralysed, but not immediately; the paresis depending not upon immediate interruption to the transfer of impressions, etc., but to slower nutritive changes.

Yet, Dr. Lochner remarks, he would still have doubted if the spinal cord could be severely injured, whilst the investing canal was still intact, had not a similar case occurred, in the same year, in the practice of his colleague, Dr. Bruglocher. In this instance, a man, aged thirty-five, of powerful build, slipped down some stone steps in the frosty weather, in January, 1874, and was soon afterwards picked up dead. At the *post mortem* there were found several extravasations of blood on the pia mater of the brain, and in the front of the anterior lobe of the brain the grey substance had an extravasation of blood as large as a pea. The medulla oblongata was soft, its tissue of gruel-like consistence with punctiform extravasations of blood. The spinal cord at the level of the sixth cervical vertebra was torn across to the right and posteriorly, so that more than half of the cord was severed. Its tissue was of gruel-like consistence. Corresponding to this spot there was an effusion of blood within the membranes. The connective tissue in the posterior mediastinum, in front of the vertebræ, was much infiltrated with blood. On the occiput, there was a wound in the skin about one and a quarter inch in length. It appeared that the neck and head had been forcibly bent backwards in the fall. The cranial hæmorrhages may be explained in part by direct violence, in part by *contrecoup*. Dr. F. Betz, in his *Memorabilien*, 1873, Band xviii. p. 167, records a similar case in an athlete, aged twenty-six, and notes the rarity of such cases. This may, perhaps, justify the present record.

W. BATHURST WOODMAN.

CLOUSTON ON EPILEPSY WITH LESION OF THE CONVOLUTIONS.—Dr. Clouston (*Journal of Mental Science*, Oct. 1875) reports two cases of epilepsy with lesion of the convolutions. The first, a man, aged about thirty-eight, was found wandering about the town in a stupid state. When he became more sensible, nothing could be got out of him as to the place of his residence or his relations. He admitted that he had drunk hard and had had venereal disease. The expression of his face and his slow speech were like that of a man in a state of general paralysis, and as the lethargy and weakness passed off it was found that he had partial paralysis of one arm. Six months after admission he began to have severe epileptic fits, which were repeated periodically for years. He became incoherent, slightly weak-minded and intensely

irritable, especially after the fits. Nine years after admission he had cancer of the penis, which was amputated, but neither the operation nor the healing process had any effect on the epilepsy. In 1874 the glands of the groin began to swell and ulcerated, and up to his death, eight months later, he had only one fit. The inner plate of the skull-cap, when examined, was found eroded in a circular space three inches in circumference behind and above the right internal ear. Portions of the temporal, parietal, and occipital bones were so affected. The dura mater under this was rough on its outer surface and had many spicula of bone projecting, and was thickened in the centre to a quarter of an inch. It consisted here of three layers, one a firm white fibrous layer, a middle space of clear fluid, and then the thickened dura mater with an inner fibrous lining. Its inner surface all over the right hemisphere was mottled and slightly roughened by dusky iron-mould-looking spots, as if from old extravasations. The dura mater on the left side was somewhat thickened in one spot, but the bone under it was not rough. The upper part of the brain was normal; the under parts of both anterior lobes lying on the orbital plates were of a dirty brown colour, the convolutions being shrunk and softened, the softening not extending beyond the grey substance. The tips of both middle lobes were similarly diseased. In the lower part of the middle lobe several convolutions had undergone simple atrophy. The rest was exsanguine and œdematous but normal. The microscope showed that the dark soft spots on the convolutions were broken-down brain-tissue and masses of blood-colouring matter, the result of small apoplexies. The second patient was a male, aged thirty, admitted in 1868. He had been five years an epileptic, fits having followed a fall on the left side of the head. The fits had been becoming more severe, and he had been dangerous and violent. He had severe fits every fortnight or three weeks, both by night and day. He was at times quiet and comparatively rational, but usually stupid and very confused, and never able to employ himself. He had fits in the same way till his death, which took place in 1875, twelve years after the fits began. On examination, there was found in the squamous portion of the temporal bone an irregular excrescence of bone projecting upwards, and closely adherent to it the dura mater, arachnoid, pia mater and brain, all matted together by tough fibrous tissue. Two or three of the convolutions near it were atrophied, softened, and of a dirty-grey colour. The softening extended inwards as far as the ventricle, and the posterior end of the corpus striatum was slightly affected. The dura mater was adherent, and in one place much thickened. In the centre of this thickening was a small spiculum of bone in the arachnoid, about a quarter of an inch in diameter, and over this a small thin clot of blood in the dura mater. The brain-substance generally was pale and thick; there was interstitial atrophy round the vessels, causing a cribriform appearance. The medulla and pons were also in this state. The softened portions of the convolutions consisted of broken-down cells and fibres, while the white softening consisted of shrivelled white fibres, granular blood-vessels and increased nuclei of the neuroglia. Dr. Clouston remarks, that in these the epilepsy was regularly periodic as in ordinary hereditary epilepsy, where no lesion can be demonstrated. Therefore there must have been, in addition to the actual disease in limited parts of the brain, a tendency in

the whole organ to the irregular motor action that constitutes epilepsy. In both cases the lesions chiefly affected the periphery of the brain, confirming recent observations. The tendency for small apoplexies to occur everywhere inside the dura mater and in the grey matter of the convolutions in the first case and round the spiculum of bone in the second, is noteworthy, and not as yet sufficiently taken into account.

G. FIELDING BLANDFORD.

SOLTMANN ON THE FUNCTION OF THE CEREBRUM IN NEWLY BORN INFANTS.—Dr. Otto Soltmann contributes to the *Jahrbuch der Kinderheilkunde*, Band ix., a paper on the function of the brain in newly born infants. He adduces experimental evidence for the theory that during early infant life the spinal system performs more important functions than the cerebral system. For example, convulsions in children he refers entirely to the spinal nerves. In affections of the thorax and abdomen, in inflammations, fevers, and the exanthemata, convulsions are common in children; while in adults there only occur rigors, headache, or slight delirium. He goes on to show that the various movements are in reality reflex, or due to instinct. For example, closing the lids to protect the eye is not exhibited till the seventh or eighth week. The child is ignorant of danger; and it is not till the brain begins to act that the child recognises danger, and closes the eye accordingly. In favour of this view, he quotes from West.

He compares the relative amount of the grey and white cerebral matter as anatomically supporting his theory.

The effect of the constant current, when applied to Hitzig's centre in young animals, was not perceptible till they were twelve days old, and then only by contractions of the upper extremities. On the thirteenth day the lower extremities were sensibly affected by the current.

The theory is further supported by experiments on adult animals, which seemed to prove that they could be reduced to the condition of young ones by removal of Hitzig's centre.

The paper is accompanied by various diagrams.

ROBERT J. LEE, M.D.

OBSTETRICS AND GYNÆCOLOGY.

FÉRÉOL ON A CASE OF UTERINE DECIDUAL MEMBRANE EXPELLED WITHOUT HÆMORRHAGE, AND WITH THE SIGNS OF INTERNAL HÆMORRHAGE; PROBABLE EXTRA-UTERINE FETATION.—Dr. Féréol (in *Archives de Tocologie*, January 1876) narrates an instance of this nature. The patient was aged twenty-five, a sempstress, mother of two children. The last labour two years previously to the present attack, was followed by a severe attack of pelvi-peritonitis, which confined her to bed for three months. The catamenia had ceased two months. On July 20 she was in her usual state of health; whilst seated on a chair, she suddenly, and without any appreciable cause, experienced severe pain in the lower abdomen, which necessitated her going to bed, where she remained two days without any further symptoms. On the 22nd she continued her work—the pain being constant but slight. On the 23rd she was imprudent enough to go out;

on her return the pain suddenly became extremely intense, and she continued in a state of syncope, from which she scarcely rallied until her admission into the hospital on the morning of the 26th, when her condition was almost hopeless. She was bloodless, of a deathly pallor, in an almost incessant state of syncope, vomiting everything she took; the pulse small, thready, almost imperceptible, 120. The abdomen was distended, tympanic, extremely sensible to the touch, the pain not being referred to any one particular spot. There had been no external hæmorrhage whatever; a vaginal examination revealed a fulness in the right and posterior cul-de-sac; the uterus was immobile, the os patulous; no tumour was appreciable. The condition of the patient was so extreme that the question of transfusion was considered. In the meantime ice with a little brandy, depression of the head, and other means were resorted to. The vomiting ceased, and she began to improve.

On the 28th, two days after admission, on making a vaginal examination, the finger encountered a membrane lying free in the vagina; not a drop of blood, merely a little yellowish mucus, being passed with it. This membrane was triangular, thick, villous on one aspect, presenting on the other glandular apertures—a well marked decidua membrane. From this time the patient gradually improved; the pallor and weakness lasted some time; but ultimately convalescence was established.

DONNÉ ON ABLATION OF THE BODY OF THE UTERUS, IN CASES OF IRREDUCIBLE INVERSION, BY EXTERNAL HYSTEROTOMY.—M. Donné (*Archives de Gynécologie*, Jan. 7, 1876), in a recent communication to the Academy formulates the following conclusions.

1. External hysterotomy is an extreme surgical resource, but precious for cases of irreducible inversion, which threaten immediately the life of the patient.

2. This operation does not furnish a greater mortality than that of the greater number of grave operations.

3. In the actual state of science, it ought to be made preferably by the ligature, bearing in mind the perfection attained by this method.

4. For the first months of an inversion—even the first year, as far as possible, repeated tentative efforts at reduction, at lactation which generally suppresses the hæmorrhages, and all sorts of palliative methods, should be fairly tried.

The operation ought to be reserved for cases recognised as irreducible, and for the period remote from the commencement of the malady, when involution has completely taken place, and the neighbouring organs have undergone changes rendering the risk of peritonitis much less, this being very important.

THOMPSON ON LACERATION OF THE GRAVID UTERUS.—In the *Obstetrical Journal* for January and February, 1876, Mr. J. Ashburton Thompson contributes an interesting article on this subject, specially in reference to a recent trial, Regina v. Wood, where the question of manslaughter was raised on account of alleged malapraxis. The chief symptoms of this sad accident which he points out are—1. Violence of the throes before rupture; 2. A peculiar pain at the time of rupture; 3. Hæmorrhage; 4. Immediate cessation of the throes; 5.

Retrocession of the presentation; 6. The speedy occurrence of collapse; 7. Convulsions.

Reference to twenty-three unselected consecutive cases is given, and the occurrence or absence of individual symptoms in the several cases is commented on. He shows that variations from the classical descriptions of such cases are not only common, but are actually more common than the typical cases themselves. The aid to diagnosis to be gained from the character of the uterine contraction was in 73·4 per cent. none; from the occurrence of characteristic pain at the moment of rupture in 57·8 cases per cent., none; from the action of the uterus subsequent to rupture in 47·1 cases per cent. none; from the sudden occurrence of collapse in 66 cases per cent. none; from retrocession of the child (in cases where retrocession was not mechanically obstructed) in 75·8 cases per cent. none; from the symptoms of external hæmorrhage and of convulsions, none.

From a general view of these cases, it appears that in some an early diagnosis of the patient's condition was impossible, for the simple reason that they showed no extraordinary symptom whatever; while in many, although the condition of the patient attracted attention, there was no one symptom marked enough, or any combination of lesser symptoms, which would have justified the diagnosis of laceration had the presence of that injury been suggested.

A. W. EDIS, M.D.

CUMMING ON THE UTERINE SOUFFLE AND THE FETAL HEART.—In a paper read before the Obstetrical Society of Edinburgh (*Edinburgh Medical Journal*, September, October, and November, 1875), Dr. James Cumming gives a detailed account of the views generally accepted with regard to the results of auscultation in pregnancy, and adds some original observations with regard to the relation between the rate of the fetal heart and the sex and weight of the child. He adopts the view that the uterine souffle is produced by the vessels which ramify in the uterine walls, and that it has no relation to the position of the placenta, or the integrity of the circulation through it. Out of 111 observations on the rapidity of the fetal heart, Dr. Cumming found that correct predictions as to the sex of the child exceeded the incorrect by only thirteen. From observations on the weight of the children, he concludes that this uncertainty depends on the fact that the pulse-rate varies not only with the sex but with the weight, and that thus a large female child may have a slower pulse than a small male. The result at which he arrives is, that the ratio between the weight of the child and the fetal pulsations is about 19 beats per lb. for the male, and 20·2 beats per lb. for the female.

A. L. GALABIN, M.D.

BYFORD ON THE TREATMENT OF FIBROUS TUMOURS OF THE UTERUS BY ERGOT.—Dr. W. H. Byford has devoted his address in obstetrics and the diseases of women and children, delivered before the American Medical Association, to a discussion of the treatment of fibrous tumours of the uterus by ergot. He has collected a large number of cases related by various authors, in a notable proportion of which the complete disappearance of the tumour was recorded, and in most of the remainder an amelioration of the symptoms of hæmorrhage and leucorrhœa. The whole number of cases treated was 101. Of these 22 are reported cured, and only 21 entirely resisted the treatment. The ergot was given

in three different ways: 1. by the mouth; 2. by injection into the cervix uteri; and 3. by injection into the cellular tissue, generally of the abdomen. The last method is apt to cause local irritation, but this effect depends in some measure on the preparation used. Dr. Byford prefers a fresh aqueous solution of the solid extract prepared by Squibb. A quantity representing from 60 to 120 grains of powdered ergot is injected once daily, or once in two days. Advantage is also gained by the combined use of belladonna and of the bromides and iodides.

LUSK ON THE GENESIS OF AN EPIDEMIC OF PUERPERAL FEVER.—In the *American Journal of Obstetrics*, Professor Lusk gives an account of the genesis of an epidemic of puerperal fever, which took place in the Bellevue Hospital in the early months of 1874. He commences the history at the end of August 1873, at which time there was a fatal case of peritonitis after delivery by forceps, and rupture of the perinæum. Soon afterwards there occurred five other cases of febrile disturbance a few days after delivery, but ending in recovery. The patients were on this account transferred to another ward, and the sanitary condition remained satisfactory from that time till November 10, when the case occurred which seemed to be the starting point of the epidemic. A woman was delivered after a dilatation stage lasting forty-five hours, but an expulsive stage of only a few minutes. On the third day the temperature rose to 104.7°, pulse to 140, and on the seventh day she died. *Post mortem*, no peritonitis was found, and no lesion except slight endometritis. From this time febrile attacks began to appear, although not at first of a fatal character. During the remainder of November, 10 cases out of 24 had rigors on the third day, and one died. During the month of December, out of 44 deliveries there were 24 cases of febrile disturbance and three deaths. In the middle of the month the ward was changed, but without effecting any improvement. With the commencement of January new resident physicians came into office, but without bringing any favourable change; for out of the next nine patients delivered seven had febrile symptoms, and three died. The epidemic continued, and in March it was noted that the patients appeared affected before the completion of labour. Its duration was prolonged, and the uterus could not be got to contract after delivery. Diphtheritic ulcers in the genital passages began to be a common feature in the cases seriously affected. Micrococci were found beneath the deposit, and scattered through the tissues of the uterus. At first prompt cauterisation had a surprising influence for good, but later on the miasmatic condition seemed to find other channels of entry, and local cauterisation ceased to have any marked efficacy. Dr. Lusk considers that the contagion was mainly communicated by the nurses, who were deficient both in number and in quality. He himself, although spending some time in the hospital daily, had no single case of febrile disturbance among patients attended in private practice. The wards were at length closed on June 11, when there had been 31 deaths out of 166 deliveries since January 1. Dr. Lusk draws the following conclusions. 1. Puerperal diseases may be engendered by the miasmatic atmosphere of a ward alone. 2. There is an eminently contagious form of puerperal fever, not primarily derived from a miasm, but capable in time of generating a poisoned atmosphere.

A. L. GALABIN, M.D.

TARBELL ON REDUCTION OF CHRONIC INVERSION OF THE UTERUS BY PERSISTENT MECHANICAL PRESSURE.—In the *Boston Medical and Surgical Journal* for January 13, Dr. Tarbell, of Massachusetts, relates the case of a woman, aged thirty-seven, who was admitted into hospital on account of inversion of the uterus, which was first perceived on the third day after labour, ten months previously. Various unsuccessful attempts had been made to reduce it. Dr. Tarbell and Dr. Minot attempted reduction first by manipulation, and then by an India-rubber air-pessary, inflated, and left in the vagina for five days; but without success. An attempt at reduction, after making longitudinal incisions in the os and cervix, also failed.

Dr. Tarbell procured a flexible India-rubber cup, of about the size of a half lemon, and with a straight and inflexible stem eight inches long. The cup was applied to the inverted fundus, and the end of the stem, projecting some distance from the vagina, was attached by straps, one over the pubes and one over the sacrum, to a belt fastened around the waist. The crest of the ilium kept this belt from being dragged downward; and by buckling the two straps tighter or more loosely, the direction and amount of the force applied could be easily regulated. Both straps were buckled tightly, and the patient was kept upon her back in bed. On the second day she had a chill with subsequent fever (temperature 102°), and some tenderness of the abdomen. The instrument was removed, and in four or five days these symptoms subsided.

The cup with the stem was now reinserted, and the straps tightened so as to produce constant firm pressure upward against the whole fundus. On the third day the os seemed to have yielded so as to allow a small portion of the cervix to resume its normal position. On the seventh day the uterus was reinverted one-half, so that the fundus was at a level with the os. The cup was then cut off, leaving only its base, a flat surface three-fourths of an inch in diameter, to be applied to the fundus. On the eighth day this was found to have passed one and one-half inches up within the cervix, pushing the fundus before it; and on the ninth day of the continuous pressure the inversion was completely reduced, the sound passing three inches above the os.

During the treatment there was a profuse foetid and purulent discharge from the uterine surface, which, in the exhausted condition of the woman, might easily have proved the origin of septic poisoning, had it not been for the abundant vaginal douches of tepid water frequently given by a skilful nurse, in such a manner as not to disturb the apparatus.

Three and a half months after the treatment, the patient was rapidly recovering from the extreme anæmia, and called herself quite well. She had menstruated regularly each month, though the flow was but slight. The uterus was in normal position, was not painful or tender to touch, and the sound entered two and three-fourths inches.

In his comments on the case, the author quotes Dr. R. Barnes's opinion in favour of this method of treatment.

DAVIS ON THE TREATMENT OF PLACENTA PRÆVIA.—The Report of Luzerne County Medical Society (*Transactions of the Medical Society of the State of Pennsylvania*, vol. x., part 2) contains an account of a mode of treatment of placenta prævia,

adopted in these cases by Dr. R. Davis. The following is the procedure as described by the author.

'Having ascertained that the placenta was detached to a greater extent on one side than the other, I introduced my hand on that side between the placenta and uterus, carefully separating them where they were still united, until the border of the placenta was reached; then, seizing the border with three fingers, I drew it down forcibly to the other side of the uterus. I now found that the bag of waters protruded and the head presented. I ruptured the bag of waters, and immediately the head engaged in the os, and crowded the placenta to the side of the uterus. Here was a condition of things which I had observed before, in four cases of partial placenta prævia, in which the labour ended either naturally, or by the use of the forceps, and in which there was no further hæmorrhage after the placenta had thus become detached on one side.'

Dr. Davis remarks that the number of cases in which this treatment has been adopted is not sufficiently large to warrant any conclusions as to its superiority over other modes of treatment, but something may be said in its favour on general principles.

1. It leaves the connection between the uterus and placenta on one side of the uterus undisturbed, and that, presumably, on the side of the most extensive connection; a consideration of much importance, as regards danger to the child.

2. It dispenses with the necessity for the operation of turning, a confessedly dangerous operation for the child, and one not devoid of danger to the mother.

3. In case the operation of drawing the placenta down to one side, as described, is successful in arresting the hæmorrhage, then the case is converted into a natural labour, and may be either left to nature or terminated by the forceps; but, should the hæmorrhage be not arrested and the forceps impossible of application, there is still nothing to prevent a resort to version, the same as if the operation had not been performed.

The performance of this operation presupposes a dilated os; and therefore, as dangerous and sometimes fatal hæmorrhage is liable to occur before dilatation has taken place, it is not alleged that this operation meets all the difficulties which may be encountered in a case of placenta prævia.

PINCUS ON RUPTURE OF THE LIVER IN NEW-BORN INFANTS.—Dr. Pincus relates in the *Vierteljahrsschrift für gerichtlich. Medicin und öffentl. Sanitätswesen* for January 1876, three cases of this rare lesion.

Case 1.—A woman, who had already borne two children, was confined of a third child, which, she said, was stillborn. She stated that, not believing that her confinement was so near, she was seized with labour-pains while in a cellar, and that the child was born feet foremost and precipitated on the paved floor. Believing the infant dead, she put it in a vessel, covered it, and returned to her work. When examined two days afterwards, the child was found to be of full term, and to have breathed at the moment of birth or immediately afterwards. There were no external signs of violence, but in the abdominal cavity there was a large extravasation of blood derived from a rupture of the liver. The laceration extended through nearly the whole thickness of the middle of the right lobe; it commenced four-fifths of an inch from the margin, and ran back-

wards in a straight line for about two inches. The edges of the laceration were notched, the surface rough, and covered with partially coagulated blood. The whole liver was anæmic, as were also the other abdominal viscera and the vessels of the thorax. Nothing remarkable was found in the umbilicus or funis.

Dr. Pincus and his colleague Dr. Seydel were of opinion that the child had been born alive, and had breathed (though imperfectly), and that death was the result of rupture of the liver from some mechanical cause acting probably after birth. The lower border and other parts of the surface of the lungs were of a clear cinnabar-red colour; they floated in water, were crepitant, and on being compressed under water discharged bubbles of air. Commencing respiration was cut short by the rupture of the liver, which produced death by hæmorrhage. The rupture could only have been produced by mechanical violence, and this was not contradicted by the absence of external signs of injury. It could not, however, be admitted that the rupture was the result of a fall in the manner stated by the woman, the distance being but small, besides which, the force of the fall would have been broken by the umbilical cord. It was inferred, then, that most probably the violence had been applied to the infant's body when it was scarcely born. The woman was tried, and sentenced to three years' imprisonment for voluntary homicide. She afterwards confessed that she had caught the child by the abdomen; but Dr. Pincus doubts whether the rupture could have been produced in this way.

Case 2.—This was a case of an illegitimate child occurring in Dr. Thiele's practice. A widow, aged forty-three, became pregnant, and was seized with labour-pains. She stated that she fell senseless, and on recovering found the child lying cold and motionless between her legs. She ruptured the cord, which was twisted several times round the child's neck; and fearing that the infant might revive and cry, she filled its mouth. The body being discovered, a judicial examination was made with the following results.

The mouth was filled with earth and moss. At the bottom of the pharynx was a stone, which could only be removed by incision. There were signs of injury about the back. The umbilical cord was torn, and had not been tied. The abdominal cavity contained dark blood, and there were clots on the intestines and liver. The liver was anæmic, and the right lobe was torn, the edges of the rupture being notched and of a paler colour than the remainder of the parenchyma of the organ. Near the rupture there was a slight effusion of blood beneath the peritoneum. The kidneys were anæmic; the vena cava contained a little fluid blood. The lungs contained air, and floated in water. The heart was empty; there was a little dark blood in the great vessels. There was some sanguineous effusion beneath the cranium, and a little blackish blood in the meninges. The cranial bones were uninjured.

At the judicial examination, none of the medical experts held that the child had been born alive, and had died from the impediment to respiration or from rupture of the liver, or from both these causes together; and they attributed the rupture to traction on the umbilical cord. Others, however, declared this opinion contrary to all facts, inasmuch as rupture of the cord in sudden delivery occurred without lesion of the liver. Further, any force that might

be exerted by the cord would pass not only to the umbilical vein but to the arteries, and would thus be distributed in various directions. They, therefore, concluded that the rupture of the liver was the result of a blow or other violence applied externally. The woman was sentenced to three years' imprisonment.

Case 3.—A woman was confined, as she said, while insensible. She also said that for the purpose of arresting bleeding she filled the child's mouth and nostrils with straw; it having died, she buried it and returned home.

Examination showed that it was born at full term, and had breathed completely. The heart and coronary arteries were void of blood, while the large thoracic vessels contained some fluid blood. On moving the body dark blood escaped from the mouth and nose. On the upper lip, chest, and back were some livid spots. There was a copious effusion of fluid blood in the abdomen; the liver (which was not anæmic) presented in the right lobe a deep crack, with notched edges. The other organs and the vessels were deprived of blood. There was sero-sanguinous effusion in the pleuræ; the lungs presented the characters of complete respiration, and there were some petechial spots under the pleuræ. There was a little blood in the meninges and brain. There being no sufficient reason for discrediting the woman's assertion that she was senseless when delivered, judicial proceedings against her were not carried out.

A. HENRY, M.D.

BIXBY ON THE DRAINAGE OF THE PELVIS.—In the *Boston Medical and Surgical Journal* (November 18, 1875) Dr. Bixby, of St. Elizabeth's Hospital for Women in Boston, describes a new instrument for the ready and effective use of the double current in the treatment of suppurating cavities and in pelvic drainage.

The instrument, which he denominates the double trocar, consists of a cannula ten inches long and one-fourth of an inch or less in diameter, straight or curved according to its particular use. A horizontal septum divides its cavity into two equal chambers, the inferior extremity of each being fenestrated to the extent of an inch. Superiorly each chamber is connected by a branch, the afferent and the efferent, with rings and guard for retention. Into this double cannula there fits a flexible double trocar attached to a common handle, and answering for both the curved and the straight cannula. When the trocar is inserted and forced home, the two extremities come together in sufficiently close apposition to form a single point. A piece of India-rubber tubing two or three inches in length, attached to the afferent branch, forms a convenient coupling for the nozzle of the syringe, and the efferent is lengthened to the desired extent by the same means. The copious and uninterrupted current and the absolute immunity from the admission of air, obtained by the use of the fountain-syringe, render that instrument, or an apparatus constructed upon the same principle, absolutely indispensable to the use of the double cannula.

While the double trocar has all the advantages of the single instrument, it possesses the additional advantage of establishing at the same time a complete appliance for the double current. From the copiousness of the current obtained by means of this instrument, it has all the advantages of a large opening, without the dangers of hæmorrhage, and with less risk of self-inoculation.

This instrument is recommended in the following conditions.

With straight trocar and cannula in—1. Pelvic abscess; 2. Retro-uterine hæmatocele.

With straight cannula alone and blunt point, in—3. Pelvic abscess and hæmatocele, when a free opening is preferred and when there is a multiple sac.

With the curved instrument in—4. Pelvic drainage after ovariectomy and abdominal operations.

With straight cannula alone, in—5. The uterine cavity after the removal of intra-uterine and interstitial uterine fibroids; 6. The uterine cavity in acute puerperal endometritis, offensive *post partum* vaginal discharges, for the application of cold and of astringents in *post partum* hæmorrhage, and for the treatment of the female bladder.

1. *Pelvic Abscess.*—The patient, etherised and with a bandage passed around the waist, is placed upon the left side across a bed or upon a table; the limbs are sharply flexed, or, if preferred, in the lithotomy position. The uterus, if not anteverted, which is more often the case, should be so placed, if it be possible; if necessary, it should be held in that position with a sound. The diagnosis is then confirmed with an aspirator, the depth required to reach the fluid being carefully noted.

Since a complete or even a partial evacuation of an unilocular cyst would cause it to become flaccid, and would render further operative interference exceedingly difficult if not dangerous, the least possible amount of fluid drawn the better. The most prominent part of the tumour having been ascertained, and the seat of the pulsation of large vessels avoided, the trocar, with concealed point and armed with the guard and with both India-rubber tubes in place (the afferent closed with a stopper, the efferent tied in a single knot), is introduced into the vagina upon the finger of the left hand and placed firmly against the tumour. With the left hand in the vagina, controlling the extremity of the trocar, the puncture is made in downward direction with a firm but steady force. The peculiar impression imparted as the instrument passes into the cavity is quite unmistakable. The previous arrangement of the tubes prevents a sudden escape of the fluid. The trocar is now withdrawn sufficiently to conceal its point, the guard secured against the vulva, and the tapes for retention applied. The last step is best effected by passing them through the staple, around the limb, under the bandage around the waist, and finally tying or, what is better, buckling the extremities together in front. The patient being on the left side, the right tape is first applied, and will retain the instrument until she is turned upon the back, when the other is adjusted. If the operation be performed with the patient on her back, both tapes are put in position at once. The patient is now placed upon the back, near the edge of the bed, and the left tape adjusted. We may evacuate the abscess at once, but the better plan is to attach to the afferent branch the tube of a fountain syringe charged with a disinfecting solution, and suspended or held six feet above the bed, at the same time untying the knot in the efferent branch and placing its extremity in a vessel on the floor beside the bed. The trocar is now withdrawn without fear of displacement, the central opening of the cannula is closed with a stopper, the stop of the syringe is opened, and the contents of the abscess are forced out by the strong current.

We have now in position a convenient and ever ready appliance for the use of the double current, with little risk of displacement, of easy application by the most inexperienced attendant, and with slight annoyance to the patient. The frequency of the application should depend upon the nature of the discharge and its effect upon the system. Dr. Bixby usually commences the treatment with three daily applications and one at midnight. Under all circumstances the application should be copious. The efferent current should be frequently interrupted, the cavity thus filled, and contact with every part of it secured. He uses a five per cent. solution of carbolio acid (two drachms to sixteen ounces of glycerine, soap, and water) as by far the most efficacious.

2. *Retro-Uterine Hæmatocèle.*—Notwithstanding the recommendation by most authorities of a free opening in the treatment of this affection, Dr. Bixby attaches much importance to the method above suggested in connection with the treatment of pelvic abscess, for the reason that, as the aspirator indicated in all his cases, the contents of the cyst are composed, even in the late stages, not only of coagula but of a large amount of sero-sanguinolent fluid. After what seemed to be a complete evacuation after the free opening, the cavity continued to secrete for weeks a purulent, offensive discharge, as if from a pyogenic membrane.

3. *In Pelvic Abscess and Hæmatocèle,* after free opening, the use of the straight cannula with probe-point, in connection with the fountain-syringe, will be found to render invaluable service.

4. *Pelvic Drainage after Ovariectomy.*—When the operation has reached the stage prior to that of the closure of the wound, after applying a bandage around the body, the surgeon passes the left hand into the pelvis along the pedicle until it reaches a point in the reflexion of the peritoneum opposite Douglas's fossa, and with the right hand introduces the trocar into the vagina, armed with its guard, its afferent and efferent tubes adjusted, and its point concealed. With bimanual manipulation, the extremity of the instrument is placed against Douglas's cul-de-sac, as low as possible below the uterine connection, without impinging upon the rectum, and held firmly in position. An assistant pushes the trocar through the vaginal septum, its passage being guarded and controlled by the operator's left hand, still in the pelvis. This done, the point of the trocar is concealed by a slight withdrawal, the instrument tilted upward and forward, and the extremity of the cannula protected by a probe-point. The guard and tapes are adjusted as in pelvic abscess, and the trocar is entirely removed.

The cannula being in position as above described, as in pelvic abscess, the hose is attached to the afferent branch and the efferent tube is placed in a vessel beside the bed. The first few hours a sero-sanguinolent discharge usually flows of its own accord, but this being the usual stage for the formation of coagula, at least as soon as six hours after the operation a current of tepid water, slightly carbolised, should be allowed to make the circuit of the instrument, merely for the sake of insuring patency. If at the end of four or five days the fluid escape in the same condition as when it entered, and there be no untoward symptoms present, in all probability the necessity for drainage has ceased, and the cannula may be removed with impunity. Leaving the instrument in position a longer or shorter period, even after

this stage, its presence being, in Dr. Bixby's opinion, indifferent, must depend upon the judgment of the surgeon. If, on the other hand, early after the operation, or even a few days later, we discover local or general signs of putrid accumulation, the injection should be copious, frequent, and highly disinfectant, and the case treated precisely as one of abscess in any other part. He sees no reason why, by cutting off the efferent current, the entire abdominal cavity may not be thoroughly washed out.

5. *Treatment of the Uterine Cavity after the Removal of Intra-uterine and Interstitial Fibroids.*—The patient being on the edge of the left side of the bed, the surgeon seats himself a little below the pelvis. A no. 4 fountain-syringe, previously charged with a disinfecting fluid, is suspended, or held six feet above the bed. The hose is coupled with the afferent branch of the cannula. The cannula is now introduced into the patulous os, and held in position with the left hand; this done, the nurse arranges the bed-pan and places the afferent tube (four inches long) of the cannula in it. The suction extremity of a Davidson's syringe is placed in the bed-pan, the other in a vessel at the surgeon's feet. Everything being in readiness, the stop of the hose is opened. As the fluid begins to enter the pan, having made the circuit of the cannula and the uterine cavity, the surgeon simultaneously commences with the Davidson's syringe to pump the fluid into the vessel at his feet. In this manner any amount of the fluid can be employed without once overflowing the pan and wetting the patient, an accident most annoying, not to say dangerous, since it necessitates an immediate change of clothing. As in pelvic abscess, during the passage of the fluid the current should be frequently interrupted, in order to secure its contact with every part of the suppurating surface. In a large and patulous uterus no danger need for a moment be feared. In Dr. Bixby's cases this procedure occasioned a sense of fulness, but not the slightest pain or discomfort. In one case, it was employed twice daily by himself, and at midnight an injection through the drainage-tube by the nurse, for eighteen days, menstruation being no contraindication. The quantity used was always not less than two or three quarts. He relied mainly upon the employment of a solution of carbolio acid, two drachms to sixteen ounces of glycerine, soap, and water. Though the tumour enucleated was six inches in diameter, its removal leaving an enormous suppurating surface, there was not the slightest evidence of septic poisoning, and the patient made a rapid recovery.

6. *Treatment of the Uterine Cavity in Acute Puerperal Endometritis and in Offensive Post Partum Vaginal Discharges.*—The necessity for the most thorough application of disinfecting measures at the slightest evidence of an offensive *post partum* vaginal discharge being placed beyond question, the double cannula and fountain-syringe will be found an invaluable means for the accomplishment of this end. The method of application is the same as that employed in treatment of the uterine cavity after removal of fibroids.

7. The method of application in the use of cold and astringents in *post partum* hæmorrhage, being the same, does not require a separate mention.

8. In the treatment of *chronic cystitis in the female*, the cannula is employed, with long efferent tube, as in pelvic abscess after simple puncture.*

* The curved cannula with probe-point admirably answers the purpose of a double male catheter.

Originality is here claimed for the double trocar only ; for the double cannula is mainly an improvement upon those hitherto in use. The compactness of the instruments, available for so many different and important ends, renders it useful as well to the general as to the special practitioner.

KOEBERLE ON A CASE OF OVARIOTOMY IN A GIRL AGED THIRTEEN.—Dr. Kœberle relates an interesting case of ovariectomy at an early age in the *Gazette Médicale de Strasburg* for September 1, 1875.

He remarks that ovarian tumours are occasionally met with in girls from five to fifteen years of age ; but they are generally dermoid tumours, or cysts of the parovarium, true ovarian cysts being very rare. He has operated three times on girls nearly fifteen years old ; two were cases of dermoid cyst, and in the other the organ of Rosenmüller was the seat of disease. In another case, in which he did not operate, there was a cancerous tumour in a girl eleven years old. The patient died four years afterwards of cancerous cachexia.

The subject of the present case was a girl aged thirteen. The catamenia had commenced three months previously ; the first time they were abundant, but the second time they were less in quantity, and from this time a rapid increase in the size of the abdomen was observed. Kœberle diagnosed multilocular ovarian cyst of the right ovary, and performed ovariectomy. A small incision was made ; the several cysts were gradually emptied, and the tumour, which had no adhesions, was removed. The pedicle, which was rather short, was ligatured. The wound in the abdomen was united by deep and superficial sutures ; but the former did not pass through the peritoneum. On the eighth day after the operation the patient was attacked with gastric disturbance, and had sour eructations, vomiting of greenish matter, etc.; the pulse was 120, small and irregular ; the temperature 39.5° Cent. (103.1° Fahr.). She became worse ; had violent thirst, dry skin, and cold extremities. Recourse was had to the stomach-pump, by which the gases were removed from the stomach by pouring water into it. Distinct relief was soon manifested ; and the operation was repeated three times, at intervals of ten, fifteen, and twenty hours, always with a favourable result. The patient then had aphthæ of the mouth, epistaxis, and abscesses of the ears, one of which burst spontaneously into the auditory meatus, and the other was opened by a small incision. As long as these symptoms continued, that is, for ten or twelve days, the wound in the abdomen remained stationary ; the patient, however, was convalescent on the twenty-eighth day, and returned home soon afterwards.

This is the third case in which Kœberle has used the stomach-pump with essential benefit to the patient.

A. HENRY, M.D.

RECENT PAPERS.

Case of Labour without Liquor Amnii. By Dr. Frederick, D. Lente. (*American Journal of Medical Sciences*, January, 1876.)

Double Ovariectomy performed for the removal of solid Ovarian Tumours. Transfusion of Milk four days after Operation. By Dr. T. Gaillard Thomas. (*Ibid.*)

A New Mechanical Treatment of Incurable Flexions of the Uterus. By Dr. Ellerslie Wallace. (*Ibid.*)

Two Cases of Excision of the Coccygeal Bones for Coccygodynia. By Dr. George A. Mursick. (*Ibid.*)

Short Notes of Three Uterine Cases. By Dr. A. Patterson. (*Glasgow Medical Journal*, January, 1876.)

The Inflammations and the Congestions of the Non-Gravid Uterus. By Dr. E. R. Peaslee. (*New York Medical Record*, January 1, 8, and 15, 1876.)

Purpural Fever, with special regard to its Nature, Etiology, and Treatment. By Dr. W. B. Rodman. (*Ibid.* January 8, 1876.)

On Pelvic Congestion. By M. Alphonse Guérin. (*L'Union Médicale*, January 20, 1876.)

Note on a Case of Intra-uterine Fibrous Polypi, appearing at Intermittent Periods, coinciding with the existence of Pregnancy. (*Gazette des Hôpitaux*, January 15, 1876.)

REPORTS OF FOREIGN SOCIETIES.

MEDICAL SOCIETY OF BERLIN.

November 3, 1875. *Tardy Development of Hereditary Syphilis*.—Dr. Lewin showed a young man, aged or eighteen, who was born apparently healthy, and remained so up to the age of five years, when he had nodes on both tibiae, with ulceration of the superjacent soft parts, also ulcers of the pharynx and larynx, and later on of the nose and face. At present a great part of the nose and upper lip was quite destroyed, and the remainder was infiltrated and covered with ulcers. The upper incisor teeth presented the change described by Hutchinson, and lay loose in the alveoli. Beneath the right eye was a large ulcer penetrating to the bone ; the hard and soft palate, tonsils, and epiglottis were almost entirely destroyed. On both tibia were large nodes, covered with white linear cicatrices. The eyes presented the remains of parenchymatous keratitis. The patient had the appearance of a boy twelve or fourteen years old ; the genital organs were atrophied. The father said that he had become infected with syphilis during his wife's pregnancy, and had been treated with mercurial pills. In the mother, only very trifling signs of syphilis were found. There was no evidence of infection of the patient after birth. In commenting on the case, Dr. Lewin said that hereditary syphilis might manifest itself very early or very late, for the simple reason that the infection communicated from the mother to the foetus had in the latter a course similar to that in adults. In adults, there were two distinct stages of incubation : one, of two or three weeks' duration, lasted from the time of infection to the appearance of local induration and indolent bubo, which arrested the further transport of the virus ; the duration of the second stage was to the appearance of the macular exanthem, about two months. An incubation-stage of this duration had to be gone through when the foetus was infected through the mother's blood ; and it depended on the period of pregnancy at which the mother was infected, whether the child should at its birth have advanced syphilides or even visceral disease, or be born with incipient syphilitic maculae, or whether, being born apparently healthy, it should show signs of syphilis after three months. Dr. Lewin regarded cases of retarded hereditary syphilis either as instances of relapse after imperfect treatment, or as the first outbreak of an infectious germ lying latent in the organism. Of the latter, the proof was difficult ; but an example was afforded by the following case. A woman became syphilitic through the application of a strange child to her breast, and infected her husband and her own child. The husband died of

syphilis of the brain. The woman and child were cured, but after seventeen years they presented extensive defects in the pharynx and larynx. The woman had two children by a second marriage; one of these died of syphilis at the age of five and a-half months; the other, now a girl fifteen years old, remained healthy up to her sixth year, when she had syphilitic skin-eruptions, which were cured by mercury and did not reappear. Similar cases had been recorded by other authors, especially Hutchinson.—Dr. Henoch doubted whether the case brought forward was really one of syphilis. The affection of the face reminded him of lupus, and the morbid changes in the tibiae had not the syphilitic character. The evidence of tardy syphilis must be received with great caution. In the children's department of the Charité Hospital, the accounts given by the parents would often enough lead to the diagnosis of tardy syphilis; but on closer examination it was generally found that the case was one of newly acquired syphilis, or a relapse.—Dr. Lewin said that he regarded the diagnosis of syphilis in his case as only very probable, but he had no ground for suspecting acquired syphilis. Besides the history of the case, its syphilitic nature was indicated by the multiplicity of the parts affected and the backward state of growth, which did not occur to this extent in scrofula.—Dr. O. Simon said that the ulcers on the face were characteristic of syphilis and not of lupus.—Dr. Hirschberg said that the syphilitic nature of the case was specially indicated by the concurrence of parenchymatous keratitis with destruction of the fauces; he had seen this in two cases of congenital syphilis. The retarded growth also essentially supported the diagnosis of syphilis.

Trichina (?) in the Vitreous Body.—Dr. Schöller showed a woman with a live trichina (?) in the vitreous body. A similar case had not hitherto been observed. The history gave no explanation. In one eye, central vision had been already lost for some time; in the other, myopia with photopsia and other symptoms had appeared some weeks previously, and on examination a filamentous body in constant motion was detected in the vitreous body, which could only be a trichina. After the patient had been examined by several members, the discussion on the case was adjourned.

November 10. *The Diagnostic and Therapeutic Value of Tender Points on Pressure along the Spinal Column.*—Dr. Moritz Meyer read a paper on this subject. He had frequently, in cases of nervous neuralgia, convulsions, and paralysis, attended with difficulty in diagnosis and treatment, found painful points in the course of the spine, especially over the transverse processes; and the application of galvanism to these points had been followed by success. He detected these points by making equal pressure along the spine, on each side, with the second knuckle of the right index finger. Trousseau had already indicated pain on pressure over the spinous processes as an important diagnostic sign in neuralgia. Remak had also at a later period pointed out the importance of painful points along the spine; and, among other cases, had successfully treated one of neuralgia of the auricularis magnus nerve by galvanism over the second cervical transverse process, and a case of facial spasm by galvanism over the fifth—these parts being the seat of pain on pressure. Similar observations have been made by Anstie, Rockwell, and Beard, and others. As to the pathology of the painful points, it was com-

monly believed that there was a local irritation and inflammation of the nerve, and Lender regarded this as primary and essential. Braun of Rehme had lately called attention to chronic spondylitis of one or several vertebrae as a frequent cause of very various neuroses, such as neuralgia of the trifacial, occipital, and glosso-pharyngeal nerves; neuralgia of the branches of the brachial and dorsal plexuses; vertigo; epileptiform conditions; paresis of the oculo-motor nerve; and even functional insufficiency of the heart. The essential nature of the affection was believed by Braun to consist in periosteal exostosis generally affecting the lateral masses and the transverse processes on one side. In thirty-seven cases out of fifty-eight the second and third cervical vertebrae were affected, either alone or with others, and next in order came the lumbar vertebrae. The affection was generally rheumatic. These nervous phenomena, characterised as peripheral by their seat and relations, were, according to Braun, generally produced by pressure on the nerve at its exit from the intervertebral foramen, or through the peculiar anatomical conditions of the distribution of the vessels and nerves in the spinal canal. Dr. Meyer could, from observations made during several years, agree with Braun that painful points were to be detected over the spinous processes, more frequently over the transverse processes, in a very large number of neuroses. He also found, though not so frequently as Braun did, swellings at the parts or in the vicinity; regarding which, however, he could not decide whether they were due to periostitis, neuritis, abnormal muscular contraction, or glandular enlargement. Sometimes one process, sometimes another, sometimes several together, were affected, the symptoms being always in closest connection with the seat of tenderness. When the local pain disappeared or became less, the nervous symptoms also disappeared or were relieved. In using galvanism, he applied the positive pole, with a plate corresponding to the extent of the painful parts, to the spine, and the negative pole to the sternum. The strength of the current was sufficient to deflect a galvanometer twenty degrees, and the application was continued from five to ten minutes. In most cases, the neuralgia was relieved *pari passu* with the relief of the local pain, and was entirely cured when this disappeared. The cure was by no means more rapid, but generally slower, than when the constant current was applied to the peripheral end of the affected nerve or when the electric moxa was employed; but the tendency to relapse was less, if the patient and physician persevered with the treatment until the pain on pressure was totally removed. Dr. Meyer narrated a rare case of neuralgia of the penis in an officer aged twenty-five, in whom pain was detected on pressure over the spinous and transverse processes of the first lumbar vertebrae; the patient also said that for some time he had found it uncomfortable to lie on the part. Under the use of galvanism—the positive pole being applied to the lumbar spine and the negative to the sternum—there was progressive improvement for some time; then there was a standstill, and a painful point was detected at the exit of the sacral nerves on each side, immediately above the sacro-iliac symphysis (the origin of the common pudendal nerve). This part was treated in the same way; and after thirty-four applications of galvanism the patient left Berlin, much improved. Dr. Meyer also advised that careful search should be made for painful points along the spine in cases

of spinal paralysis and especially in tabes dorsalis; their treatment—perhaps because they indicated the presence of a more superficial affection of the cord—being often followed with startling results. He related in illustration a case of spinal paralysis, and one of tabes; and stated that he had obtained striking results from the treatment described, in spastic affections, often of an obstinate character, in a case of chorea with spastic affection of the median nerve, in a case of articular neuralgia from pressure of a lymphatic gland, and in several cases of writer's cramp.—Dr. Westphal agreed with the author as to the value of the treatment by galvanism; but he would call attention to the fact that pressure on the spinous and transverse processes, especially of the upper dorsal vertebrae, often produced pain (and also other symptoms, such as sudden deep inspiration), in various persons, especially females, who did not present any symptoms. In these cases the tenderness often remained some time after the removal of the pressure. The subject had been exhaustively treated by Türk. As regarded Braun's work, he thought that the author had proved too much in finding painful points in diseases of the most various kinds, including even bronchial catarrh.—Dr. Meyer did not deny the fact mentioned by Dr. Westphal; but in all his cases the various symptoms were concurrent with the tenderness on pressure in points of the spinal column; in the cases of neuralgia, the pain was felt at the vertebrae from which the affected nerves emerged, and the relief of the local pain proceeded *pari passu* with that of the neuralgia and spasm. Braun's work was of great value as calling attention to the subject.—Dr. von Adelman said that the pressure on the nerves might be produced by exudation at the point of emergence.—Dr. Westphal did not think the simultaneous disappearance of neuralgic symptoms, and of the local tenderness, a sufficient proof that they had a common origin.—Dr. Meyer maintained that his explanation was a natural one.—Dr. Weber said that Onimus had published some observations on the same subject.

Spinal Apoplexy.—Dr. Goldtammer related a case of spinal apoplexy, with the view of showing that the opinion of Charcot and other French authors was incorrect, that non-traumatic spinal hæmorrhage was never spontaneous, but always of myelitic origin. A healthy girl, aged sixteen, was suddenly attacked with violent pain between the shoulders, and, at the same time, paralysis of the legs. On her admission into hospital two hours later, she was found to have complete paraplegia, paralysis of the dorsal and abdominal muscles, and anaesthesia as high as the nipples; reflex movement was increased; there was no fever. The paralysis continued. After three or four months she had contraction, spontaneous twitchings, and greatly increased reflex excitability in the lower limbs. At the end of a year she died. At the necropsy the spinal cord was found reduced in size in a small portion of the upper dorsal region; and at this point was a rust-coloured deposit, about one third of an inch long, consisting of firm connective tissue, with crystals of hæmatoidin and brown pigment-granules; it involved the grey substance and the white columns on the right side. The cord immediately above and below the deposit was studded with granule-cells; the nerve-fibres and ganglion-cells were greatly reduced in number, atrophied, and in a state of fatty degeneration. The remainder of the cord, when hardened and examined, was found mostly healthy. Dr.

Goldtammer considered that the history of the case and the appearances found did not indicate hæmorrhagic myelitis, but rather spontaneous hæmorrhage. He was inclined to attribute the hæmorrhage to menstrual excitement. During the first days of the patient's illness (who had not yet menstruated), there was a mucous discharge from the vagina, and at the *post mortem* examination a corpus luteum was found in one of the ovaries.

November 17. *Trichina (?) in the Vitreous Body.*—The discussion on Dr. Schöler's case was renewed. Dr. Schöler said that, since he presented the patient he had abandoned the idea that the moving body was a trichina.—Dr. Fritsch had examined the patient, and believed it to be a filaria.—Dr. Schweigger doubted whether it was an entozoon at all. The appearances described might be produced by changes in the structure of the eye itself; for instance, the canalis hyaloideus might undergo vesicular dilatation. Dr. Hirschberg said that it was not a trichina; but this did not exclude the idea that it might be an entozoon. The appearance presented was very rare, and had not been described even by Von Gräfe.—Some further remarks were made by Dr. Landsberg, Dr. Schweigger, and other members.

Paralysis of the Spinal Accessory Nerve.—Dr. B. Fränkel showed a patient who, fourteen days previously, while at work, found that he could not swallow, and could not raise his right arm above the horizontal position. When the patient was presented, the paralysis was better, and paresis only was left. The phenomena of paralysis of the trapezius and sterno-cleido-mastoid muscles on the right side, and of the right part of the velum palati and the right vocal cord, were explained and demonstrated. The patient being unable during phonation to apply the velum to the posterior wall of the pharynx on the right side, a space was left through which, by means of the rhinoscope, the narrowing of the orifice of the Eustachian tube by the action of the levator palati could be observed. Dr. Fränkel regarded the case as showing that the motor fibres of the vagus nerve were supplied from the spinal accessory, and that the muscles of the palate were, at least in part, supplied by the latter nerve. There was no disturbance of sensation; the facial nerve was unaffected; the pulse was eighty, small; no changes could be detected in the respiration.

Primary Infectious Osteomyelitis.—Dr. Friedmann read a paper on this subject, the discussion on which was adjourned.

Osteomyelitis.—Dr. Senator showed the tibia of a patient, the subject of osteomyelitis, who had died after presenting symptoms which were during life regarded as those of typhus (typhoid?).

November 24. *Vaccination.*—A discussion took place with reference to petitions against vaccination, which had been presented to the Reichstag; and a resolution was passed, on the motion of Dr. B. Fränkel, in favour of the maintenance of the law of compulsory vaccination.

New Methods of investigating the Acoustic Phenomena of the Thorax.—A paper on this subject was read by Dr. H. Jacobsen.

ACADEMY OF MEDICINE IN PARIS.

January 4, 1876. *Mental Vertigo.*—M. Lasègue read a paper on mental vertigo. The word vertigo does not allow a precise definition; for sensations are

in question, of which the sufferer is the only judge. As a term of comparison, we must choose that of simple vertigo, the kind which occurs when one is at the top of a high place. Morbid vertigo also sets out from a visual impression, though the person suffering from the vertigo has only a confused consciousness of it, and closing the eyes in no ways changes his condition and sometimes increases the evil. The vertiginous sensation consists, in the first instance, in a sense of precordial distress, then in an approaching faintness, and the ground vanishes from under the feet. A secondary visual disturbance then ensues, a true obnubilation. But the dominant element of the crisis is a mental uneasiness, somewhat analogous to fear; and it is accompanied by pallor, thoracic constriction, etc. It is in vain for reason and reflection to intervene; the patient sees himself protected by a railing, he recognises the fact, but he is incapable of subduing the sensation. Two possible circumstances then present themselves; either the patient attacked by vertigo remains motionless (passive vertigo) or he exhibits a tendency to throw himself into space (active vertigo.) Mental vertigo is essentially constituted by a physical uneasiness and a mental distress which may go on to maniacal delirium. Several categories may be established. In a first category, the visual organ is clear, though varying with the patients; the sufferers are perfectly aware of the unreality of these sensations, and yet they suffer from them as if they were real. In a still more complex form, the sight of a given object, of a mirror, a gun, will bring on a crisis. The second and most frequent category comprises the cases in which the visual stage is wanting or passes unperceived, and in which the initial or dominant fact is a sensation of distress and apprehension, a groundless fear. The patient does not know what he fears, but he cannot free himself from this fear, which is so much the more distressing that it is vague and ill-defined. The intellect takes no part in this delirium; the patients are aware of its absurdity, and in the intervals of the crises, are capable of the most productive intellectual efforts. In the more complex forms, the intellect intervenes and reasons on the vertiginous sensation; but the writer only desired to call attention to the simple form.

Glanderous Leucocythemia.—M. Cohn read a paper on glanderous leucocytosis. He pointed out a hiatus which exists in the hæmatology of the glanderous affection, which he endeavoured to fill up. The method of which he makes use to number the leucocytes is only applicable to the solipeds, of which the blood coagulates very slowly. He allows the blood to subside for several hours in a graduated test-tube, at a temperature nearly at zero. The column of blood in the case of the solipeds separates into three layers; a lower one containing the red corpuscles, an upper one, almost exclusively composed of plasma, and an intermediate layer, in which are the white corpuscles, globulines, etc., heavier than the plasma, but lighter than the red corpuscles. According to the greater or less density of this intermediate layer in relation to the lower layer, the relative proportion of the leucocytes to the red corpuscles may be judged of. In glanders and farcy the layer of leucocytes increases rapidly. Parallel modifications are observed in the lymph, especially in that which is obtained from a region where some glanderous lesion is present. In fine, from the commencement, in glanders and farcy, leucocytosis,

is always present, associating itself with anemia, and its starting-point appears to be the lymphatic system.

Paraplegia from Obliteration of the Abdominal Aorta.—M. Desnos presented the pathological preparations relating to a case of paraplegia by obliteration of the abdominal aorta. The case was that of a man attacked by mitral constriction, softening of the brain, and symptoms of a dysenteric form. He was taken, after suffering acute pain from the preceding night in the left thigh, with complete and sudden paraplegia of motion and sensibility, retention of urine, blueness of the skin, suggillation, and remarkable lowering of the local temperature. He died in thirty-four hours with pulmonary congestion, hæmaturia, and intestinal flux. The appearances found at the necropsy were mitral constriction and cardiac adhesion. The aorta, otherwise healthy, showed above its bifurcation a clot, an inch long, cylindrical in shape, extending into the two common iliacs and the external iliac, and on the right into the femoral artery as far as the popliteal. He compared this rare fact with intermittent paraplegia and hemiplegia observed by veterinary surgeons in horses, and likewise in men by MM. Barth, Charcot, Gull, and Noël Gueneau de Mussy. In the latter it is due to the ischæmia produced by obturation of the aorta or its divisions by the clot. M. Desnos' case differed from the former, since the paraplegia was complete, permanent, and non-intermittent, which he explained by a complete obliteration preventing all anastomotic circulation. M. Desnos laid stress on the principal characteristics of this curious case:—1. The striking suddenness of the accidents, recalling the paraplegia of sanguineous effusion or hysterical paraplegia; 2. The excessive lowering of the temperature of the lower limbs; 3. Blueness and suggillation of the integuments; 4. Contraction of the paralysed muscles; 5. A pathognomic sign, the cessation of the arterial pulsations of the paralysed limbs.

January 11. *Rheumatism in Connection with Injuries.*—M. Verneuil read a memoir on rheumatism in its relation with injuries, of which he summarised the conclusions as follows. It is certain that injury is capable of arousing the dormant rheumatic diathesis, and even of causing its manifestations to spread to organs hitherto unattacked. It is possible that in subjects not yet attacked but only predisposed, an injury brings on the original and premature appearance of rheumatism. It is certain that the most different kinds of injuries, such as fractures, contusions, etc., have this exciting influence. All the local manifestations of rheumatism, arthritic eruptions, pain, pericarditis, cystitis, etc. may arise under this influence. Obscurities, however, still exist. How can a traumatic lesion arouse a diathesis? Why do we find such and such localisations? Why such or such a form? Why in one patient do these modifications spare the seat of injury, and in another exclusively influence the local processes? As only uncertain answers can as yet be given to these questions, some persons think it is better not to give any. M. Verneuil is not of this opinion, and develops the idea that any pathogenic influence, as cold, injury, etc., may not exhaust its action on a circumscribed point. Irradiations may set forth from this point towards other organs or to the whole system. This may be observed in a healthy patient or one of a strong diathesis. In the latter cases, distant actions and especially general disturbances are uncommon. In wounds the traumatic process progresses with less regularity;

inflammation and pain are but badly limited; the weak points of the system more easily repel the material disturbance; finally the surgical fever, more easily excited, attains a greater intensity, and is more prolonged. The provoking action of injuries on diatheses, and the choice of these diatheses for their manifestations of localities offering the smallest amount of resistance, explain the action of the principal disease in traumatism and *vice versa*.

Intermittent Broncho-Pneumonia.—M. Bourgade of Clermont read a memoir on intermittent broncho-pneumonia, frequently observed, according to him, in the middle region of France. It constitutes an incipient paludal affection, a remittent fever with bronchial and pulmonary localisations. It is more mobile than pneumonia; irregular in its progress, assuming the tertian or quotidian type. It is amenable to quinine, which effects a cure, without local treatment.

January 18. *Glanderous Leucocythæmia.*—M. Bouley pointed out the interesting nature of M. Cohn's communication. He was of opinion that the leucocytosis will facilitate the diagnosis of glanders in those cases where adequate signs are wanting. Glanders is known by three signs—chancre, discharge, and swelling of the glands—all which must be present to make it certain that there is glanders. Such at least was the opinion of veterinary surgeons until the beginning of this century. When at a later period, contagion was denied, the ravages of glanders became enormous. One of the great services rendered by Rayer to science was to establish beyond a doubt the contagious nature of this disease. It is perhaps allowable now-a-days to hope that the numeration of white corpuscles will facilitate the diagnosis in doubtful cases, which indeed are very frequent. In regiments, for instance, it happens that a horse attacked by a glanderous swelling without any other apparent sign of the disease is submitted to the application of resolvents, and when the swelling is dissolved it goes back to the ranks, where it propagates the glanders by which it is attacked. If the numeration of the leucocytes were capable in these cases of giving information, it would be a real advance. M. Bouley had had numerations made by M. Malassez on this subject which proved, in uniformity with M. Cohn's results, the existence of leucocythæmia in glandered horses.—M. Gubler expressed a fear that the bearing of a phenomenon which is very frequent and almost common-place in many chronic diseases, as in multiple suppurations, cachexias, etc., should be exaggerated. In fact, leucocytosis is too common to be erected into an element of diagnosis.—M. Chauffard shared this opinion; and leucocytosis is present in all suppurations, in small-pox, in purulent infection, and nearly all traumatisms; and also in scarlatina, measles, puerperal fever, etc.—M. Verneuil denied the constant presence of leucocytosis in the wounded as well as the hæmatic origin of pus, which, in his opinion, is far from being demonstrated.—M. Raynal regretted that, in M. Cohn's experiments, one important element had been neglected; that is, alimentation. It is well known that badly nourished animals have a large amount of leucocytes in their blood.

ACADEMY OF SCIENCES IN PARIS.

December 13. *Electric Currents.*—M. Chauveau communicated his comparative study of the electric

current, termed instantaneous, and of the continuous current, in the case of unipolar excitation. The summary of the facts he recorded is as follows. 1. In the same way as the continuous currents, instantaneous electric fluxes of very feeble intensity, more easily induce contraction with the negative than with the positive pole, but when the intensity of the current increases, the two excitations, negative and positive, always very soon become equal, and in strictly physiological cases, remain so, however far the increase of the current be pushed. Sometimes, however, a slight tendency to the inversion of the activity of the poles may be observed. Nevertheless, this tendency does not produce any very notable effect unless the nerve has undergone the perturbing influence which gives to the current of the pole the property of acting almost at once, more actively on the side of the positive pole. 2. Contraction with excitations in increasing series soon reaches a maximum value, which it cannot exceed. It is very remarkable to then see the even very considerable increase of the current, almost absolutely powerless to modify the size of the contractions. 3. The increase of the current is not, however, without influence; its action is seen, very slightly it is true, in tracings, in the form of muscular relaxation. This relaxation is so much the less sudden according as the excitation has been strong. 4. These two last characteristics are not the exclusive appanage of excitation with instantaneous fluxes. It has already been seen that they may manifest themselves exceptionally with the current of the pile; this is in the case of destruction of the spinal cord, or even of simple section of the nerves. Excitations by the current of the pile or by the induced current always give, at a certain period, tracings which, instead of differing like those of no. 1, present the most striking analogy between each other. This analogy manifests itself without any mutilation of the nervous system, if the excitation be performed on feeble frogs which are near to death. 5. The most remarkable of the characteristics of unipolar excitation by instantaneous electric fluxes is seen when the tracings obtained from intact frogs are compared with those from frogs mutilated by the section of the medulla or of the excited nerve. The former are characterised by irregularity, the second by the regularity of the superpositions exactly as with the continuous currents, and the phenomenon is due to the same cause, the partial persistence or the complete cessation of the muscular shortening after the passage of the current.

December 20. *Researches on Eucalyptus Globulus.* M. F. A. de Hartzen read a paper on this subject. The essence of eucalyptus has been examined by M. Cloëz. Besides the essence, this tree, according to the writer, contains a considerable number of remarkable substances. The brown residue obtained by distilling the alcoholic tincture of the leaves has been called eucalyptus resin; this resin contains tannin, and a great deal of fatty matter. Another resinous acid, always mixed with a little waxy matter from which it seems very difficult to disengage it, is obtained in granules. This latter acid is remarkable; it is soluble in alcohol, ether, and benzine, insoluble in acetic acid. Concentrated sulphuric acid dissolves it by forming a liquid of a beautiful carmine red, if water be added; a red matter is obtained by adding ether. If, after having macerated the leaves of eucalyptus in alcohol, they be placed in ether, it extracts from them, besides a residue of resin and

brown colouring matters, a considerable quantity of a waxy powder.

Action of Ozone on Animal Substances.—M. A. Boillot had made experiments which demonstrated to him that animal substances keep for a long time without putrefying, if five milligrammes of ozone to the litre of air be added. Two specimens placed, one in pure oxygen and one in ozonised oxygen, gave the same results in favour of preservation by ozone.

Deaf-mutism.—A note by M. Tripiet related to the pathogenesis of deaf-mutism, improperly termed congenital. Amongst the so-called congenital cases about four-fifths only became deaf towards two or three years old, and the disease made its appearance suddenly. According to the writer, this affection should be considered as an encephalic form of paralysis, of which the intrarachidean form has been described by Duchenne under the name of fatty atrophic paralysis of childhood.

T-shaped Nerve-tubes.—M. L. Ranvier presented a note on the T-shaped nerve-tubes, and their relations with the ganglion-cells. Minute experiments made by the writer have demonstrated to him that almost all the nerve-tubes which set out from the ganglion-cells, instead of preserving their individuality in directing themselves towards the centre or towards the periphery, presented T-shaped anastomoses with the tubes coming from the posterior roots.

REVIEW.

Charité-Annalen. I. Jahrgang, (1874), Berlin, 1876.

We have received the first volume of a new series of the Berlin Charité Hospital Reports. The former series, after having been published quarterly for eighteen years, was discontinued in 1868. The report now appears in the shape of one annual volume, which, the preface tells us, gives its readers 'a review of the advances made in the investigation and treatment of disease, of the results of surgical operations, of the data of pathological anatomy, in short of the performances of the establishment in all the departments of medical knowledge.' The present volume is edited by Dr. Mehlhausen, and contains a carefully arranged statistical table of the cases treated during the year, showing the results in each branch of medicine, and between five and six hundred pages of essays and reports of cases by various members of the staff. The volume closes with a paper by Professor Virchow on the method of making *post mortem* examinations, which for thoroughness in detail we commend to the notice of British pathologists. It is notorious that our waste of pathological material is enormous from the want of inclination or time to investigate the cases more fully; we fear that there is no remedy for this until hospitals insist on the pathologists devoting the whole of their time to their department, and to do this they must be paid proportionately. The pathologist in many of our hospitals is the youngest member of the staff, active, energetic and ambitious, anxious to place himself in the front ranks of his profession and to bring his name prominently before the medical world. For this purpose he finds the *post mortem* theatre most useful, affording him, as it does, ample material for specimens to lay before the Pathological Society; but he prefers taking various clinical appointments at the minor hospitals to devot-

ing himself to the arduous task of minute pathological investigations; or if, here and there, one be found to do good work giving promise of much from his future exertions, just as his experience is ripening and he has acquired some degree of manipulative skill, he is translated to the chair of an entirely different subject, and is succeeded by another youthful competitor for the honours of the Pathological Society. On the whole, we find that these reports do not differ materially from those published in this country; and though the volume contains much worth perusal, it has in it no paper remarkable for the originality of its thought or the novelty of the facts disclosed; possibly on the continent, as here, such publications are not much in favour for introducing new views to the profession. In justice to the editor, whose labours in compiling the statistics have not been light, we must give a full share of praise to the excellent arrangement and general style of the work, and we see reason to believe that the series will become a valuable addition to our annual medical literature.

RECENT FRENCH BOOKS.

Published by Adrien Delahaye.

Traitement préservatif et curatif des sédiments, de la gravelle, de la pierre urinaires, et de diverses maladies dépendant de la diathèse urique, par le docteur L. Aug. Mercier. Paris, 1872. Un volume in-12. Prix: Broché, 7 fr.; cartonné, 8 fr.

Les rimes de l'officine, par E. Genèveux. In-12. Prix: 2 fr. 50.

Published by J. B. Baillière and Sons.

La femme-médecin, par G. Richelot, docteur en médecine. Paris, 1875. E. Dentu, libraire-éditeur, Palais-Royal, 17 et 19, galerie d'Orléans. Prix: 2 fr.

Leçons cliniques sur les maladies mentales professées à la Salpêtrière par le docteur Auguste Voisin, médecin de la Salpêtrière, avec photographies, planches lithographiées et figures intercalées dans le texte. Paris, 1876. Grand in-8 de 196 pages. Prix: 6 fr.

Assainissement des régions chaudes et insalubres, par Régulus Carlotti, président de la Société locale des médecins de la Corse, membre de l'Académie nationale agricole et manufacturière, vice-président de la Société météorologique du département, et chevalier de la Légion d'honneur. Paris, 1875. In-8 de 87 pages. Prix: 2 fr.

Exposé théorique et pratique des maladies vénériennes. Nouvelle doctrine proscrivant les injections et le mercure, par le docteur Ch. G. Saint-Martin de Laplagne, suivie de 50 aphorismes, d'une histoire naturelle de la blennorrhagie, de la manière de se traiter soi-même, de l'examen des fraudes et délits dans les relations sexuelles. Paris, 1876. 1 vol. in-12 cartonné de 252 pages. Prix: 5 fr.

Leçon sur la structure et les maladies du système nerveux, par M. J. Luys, médecin de la Salpêtrière. Prix: 3 fr.

De l'emploi des préparations arsenicales dans le traitement des maladies du cœur, par M. Louis Bouyer, de Saint-Pierre de Fursac (Creuse). Prix: 1 fr.

Published by Germer-Baillière.

Large communication entre la veine porte et les veines iliaques droites, par Carlo Giacomini, professeur à la Faculté de médecine de Turin. Mémoire traduit et annoté par E. Labbé et A. Aubeau. Prix: 1 fr. 50.

Published by G. Masson.

Recherches expérimentales sur le rôle thérapeutique du suc concentré de cresson dans le traitement de la phthisie pulmonaire et des affections de la peau, par B. Dupuy.

MISCELLANY.

PROFESSOR CALORI has been nominated Rector of the University of Bologna.

A NEW code of regulations for medical education and examinations, issued by the Italian Minister for Public Instruction, is published in the *Giornale Veneto di Scienze Mediche* for January.

DEAF-MUTISM.—The *Journal des Sages-femmes* reports the case of a deaf and dumb woman, married to a deaf and dumb husband, who was admitted to the lying-in hospital for her confinement. She had had five children born dead, and a sixth which survived, and speaks and hears perfectly well.

A CONVOCATION of the University of London was held on January 17, at which, after a long discussion, a resolution was passed affirming the desirability of obtaining a new charter, and declaring that no such charter would be acceptable to convocation which did not enable the University to grant degrees to women.

LOUISE LATEAU.—The *Courrier de Bruxelles* states that Louise Lateau is dying. The usual phenomena of her ecstasies have appeared but she is not able to leave her bed. Medical aid has been called in, but without avail. The *Indépendance Belge* comments on the latter fact, and is astonished that the aid of mundane physicians should have been sought; profanely inquiring why the aid of the Virgin Mary and the curative effects of the Lourdes water have not proved sufficient. The same journal suggests that the unfortunate stigmatic may perhaps be a victim to the trickery of which she has been an instrument, a martyr to speculation on supernaturalism and superstition.

A GRATEFUL PATIENT.—The Zoological Garden at Dresden is fortunate in the possession of specimens of the larger simian races, which as a rule are acclimatised with great difficulty in our latitudes. Amongst these specimens is a female gorilla, which has been suffering for some time with an abscess of the throat. This animal astonishes and amuses the visitors and keepers by pointing out the seat of the trouble with her paw, and receives her doctor, the veterinary surgeon of the establishment, with the most lively manifestations of pleasure and gratitude. A striking resemblance will be observed in the behaviour of Madam Gorilla and the higher developments of the feminine gender, who also are generally not averse to the bland sympathy and consolation of 'my medical attendant.'

'THE THINGS THEMSELVES ARE NEITHER RICH NOR RARE,' ETC.—An unfortunate lunatic, who died in the Prestwich Asylum a short time ago, seems to have lived neither wisely nor well. A *post-mortem* examination led to the discovery of no fewer than 1,841 articles in his inside—viz., 1,639 shoemaker's sparsables, six 4-inch cut nails, nineteen 3-inch cut nails, eight 2½-inch cut nails, eighteen 2-inch cut nails, forty ½-inch cut nails, seven ¾-inch cut nails, thirty-nine tacks, five brass nails, nine brass buttons, twenty pieces of buckles, one pin, fourteen bits of glass, ten small pebbles, three pieces of string, one piece of leather three inches long, one piece of lead four inches long, and one American pegging awl—the total weight being 11 lb. 10 oz.

CHOLERA AND THE MECCA PILGRIMS.—The ravages caused by the cholera in Syria, during the last year, induced a fear lest the Syrian pilgrim should introduce the disease into Arabia, after their voyage to Mecca. According to the *Akhbar*, however, the public health of the Hedjaz is perfectly good, owing to the precautions taken at the places where the pilgrims disembarked, and especially to the interdiction placed on this voyage by some governments. Thus the arrivals of pilgrims at Djeddah have been relatively small, and amount from July 22 to

November 1 to 12,369 pilgrims, amongst whom were representatives of all Oriental nations from Mogrebins to Japanese. The pilgrims journeyed in small groups, of which the successive transport necessitated the employment of thirty-five steam-boats. The sanitary administration of Egypt has just promulgated a special regulation for the transport of pilgrims going to the Hedjaz by way of Egypt.

ZOOLOGICAL STATION AT NAPLES.—The Cambridge Board of Natural Sciences Studies report that the period of three years for which the University agreed to pay 100*l.* a year towards the expenses of Dr. Dohrn's Zoological Station at Naples will expire next year, and they have had under consideration the expediency of recommending a continuance of the grant. For the sum of 100*l.* the University has hitherto had the exceptional privilege of occupying two of the large working tables. Dr. Dohrn is unable to continue the offer of accommodation on the same terms, but offers one or two tables at 75*l.* per table. The Board, considering the claims upon the Worts' Travelling Bachelors' Fund, do not think it right to charge that fund with two tables at the increased price; and therefore recommend that one table be retained by the University for five years at the rate of 75*l.* per annum. The Board have reason to believe that very valuable work has been done by nominees of the University at the station, and the Cambridge Museum enriched by important specimens procured from it. Mr. T. W. Bridge, scholar of Trinity, and Mr. J. F. Bullar, of Trinity, have been nominated by the Board of Natural Sciences Studies to study at the Zoological Station, Naples, until July 1876.

FEMALE MEDICAL STUDENTS IN RUSSIA.—The *Semaine* of St. Petersburg publishes the following minute statistics respecting the medical and surgical courses for women in that city. The number of pupils in the two courses during the scholastic year 1874-5, amounted to 171, of whom 102 were of noble birth, 17 belonged to the commercial classes, 14 were of the shopkeeping class, and 12 were clergymen's daughters. They were divided, as to their religious belief, into 131 of the Greco-Russian Church, 23 Jewesses, 12 Roman Catholics, 3 Lutherans, and 1 Armenian. Out of the number, 23 were married women, and 53 had brought with them diplomas from private tutors. The professors of the Academy of Medicine and Surgery continued to be highly satisfied with the application shown by the female classes. Many of the pupils remained far into the night at the chemical laboratory and the dissecting-room. During the visits to the hospital, the pupils showed a knowledge of the progress of the diseases of the patients which astonished the professors. It frequently happened that they spent the whole night in attendance on a serious case.

DR. SAMUEL GRIDLEY HOWE.—Dr. Howe of Boston, the patient and pains-taking instructor of the blind, in which capacity he has achieved a reputation far beyond the limits of his native city has lately died. In 1832 he opened the Perkins Institution for the Blind, at South Boston, threw himself into this work with great ardour, and during a long period of service has contributed more, perhaps, than any other man to the improvement and happiness of an unfortunate class. He has the honour of being the inventor of the method of printing in raised letters, one of the greatest boons ever conferred upon the blind, and by his words and writings has done much for their education all over the world. He has taken a prominent part in the training of the idiotic and the feeble-minded, and was the principal of the school organised in 1851 for improving the condition of those classes. Dr. Howe's labours at the blind asylum are full of interest, and have been the admiration of many distinguished visitors to the asylum. The case of Laura Bridgman alone was enough to have established his reputation in his special field, though this was but one bright feature in a life's work well and faithfully accomplished.

The London Medical Record.

Authors of Papers, Theses, &c., will assist in the preparation of summaries by our reporters, by forwarding separate copies of their works.

CHARCOT ON THE LOCALISATION OF CEREBRAL DISEASES.

In a course of lectures delivered last year in Paris (*Le Progrès Médical*) Professor Charcot placed before his hearers a general exposition of the facts now established bearing upon this interesting and important part of medical diagnosis.

In his first lecture, after pointing out the importance of his subject, and referring to the assistance it had received from the labours of his friend, Dr. Lépine, he gives a brief account of the anatomical structure of the encephalon, illustrating it by a diagram of a vertical section of the brain, made at the level of the corpora albicantia.

After naming the different parts of grey and white matter thus displayed, the lecturer describes the histological structure of the grey matter of the convolutions, according to the statements of Meynert, Luys, and Henle. He also refers to the special labours of Betz upon the modifications of structure in different convolutions, more particularly to his observation that the convolutions lying anterior to the fissure of Rolando are characterised by the predominance of large pyramidal cells over those of globular form; while in the convolutions lying behind that fissure, and comprising the sphenoidal and occipital lobes together with the mesial portion as far as the anterior edge of the quadrate lobe, the large cells are rare relatively to the granular or round cells. In each of these regions, there is a special territory deserving closer attention. In the posterior region the nerve-cells are of large size, but the prolongations of protoplasm are few, and that rising from the base is directed horizontally and sometimes connects two cells with one another; this arrangement is observed in the cuneus, the posterior half of the quadrilateral lobe, all the occipital lobe, the two superior sphenoidal, and the connecting convolutions. According to Betz, this region is that of the sensorial functions.

In the anterior region, the part deserving special attention is that characterised by the presence of pyramidal giant-cells, or motor cells *par excellence*. It comprises the anterior frontal convolution in its whole length, the anterior parietal convolution in its upper extremity, and lastly, a part to be studied under the name of the paracentral lobe; it is more especially in this last-named lobe that the giant-cells are most numerous. They are found in the brains of all species of monkeys; and Betz, in the dog, has observed these same cells in the regions designated by Fritsch and Hitzig as motor centres, while they do not exist anywhere else. It is also true that in the monkey the distribution of these giant-cells is restricted to those convolutions in which Ferrier has shown the existence of motor points. He then recalls a case, published by Sander in the *Centralblatt*, 1875, of a child affected by in-

fantile paralysis since its third year, which died at the age of fifteen. All the limbs were more or less atrophied, but especially those of the left side. At the necropsy, the usual lesions of the cord were recognised, but, in addition, a careful examination of the brain led to the discovery that the two ascending convolutions were much shorter than natural and not convoluted, while the paracentral lobe was quite rudimentary, and contrasted with the other convolutions which were perfectly developed. Moreover, these lesions were more marked in the right hemisphere than in the left; corresponding with the spinal lesions, which were more marked on the left side. Unfortunately, the state of the nerve-cells does not seem to have been examined.

M. Charcot further remarks that in the brains of very young children these giant-cells are very few; and, again, M. Rouget has remarked that in new-born puppies excitation of the regions corresponding to the psycho-motor centres produces no corresponding muscular movement, while some time after birth these points become excitable; thus making it reasonable to infer that they develop with the age and in consequence of functional exercise. It may here be asked whether such a process of development may not possibly be the means by which such centres are replaced under the influence of functional excitement, when they have been destroyed by some lesion?

The lecturer next proceeds, after these preliminary anatomical considerations, to point out the fundamental conditions indispensable for resolving the problems relating to cerebral localisation in the diseases of the human subject. These are:—

1st. A good clinical observation, made as much as possible by the light of data supplied by experimental physiology:

2nd. A regular necropsy, perfectly made.

He then proceeds to ask and answer two questions:

1st. What are the alterations of which the encephalon is susceptible?

2nd. What are the general anatomical conditions which govern the development and mode of distribution of these lesions?

In order to simplify this inquiry, he establishes a parallel between the great divisions of the cerebro-spinal axis, viz., 1. the spinal cord; 2. the medulla; 3. the brain proper. He then goes on to point out that one great fact governs the pathology of the spinal cord, viz., the existence of so-called systematic lesions; meaning by this, lesions which systematically circumscribe themselves within certain definite regions of the cord—for example, those restricted to the anterior cornua of grey matter, producing atrophy of muscles, or those limited to the lateral columns, producing paralysis with a tendency to contraction. Such systematic lesions are also found in the medulla, the pons, and the cerebral peduncles themselves; but above this point this mode of pathological alteration ceases to exist. Indeed, it appears that in the brain proper it is the arrangement of the vascular system which governs its pathological anatomy; and this leads us to inquire what are the normal conditions of that system, and brings us back to certain anatomical considerations.

After referring to the arrangement of the arteries at the base of the brain, M. Charcot says that the posterior cerebral arteries supply the sphenoidal and occipital lobes; the anterior cerebral arteries supply part of the anterior lobes, and a large extent

of the internal surface of the hemispheres, as well as the subjacent regions of white matter; while the middle cerebral or Sylvian arteries distribute themselves over the inferior frontal and ascending convolutions, the parietal lobe, and dip into the subjacent parts of the medullary centres, and, moreover, furnish branches to the optic thalami and corpora striata. Each of these three principal arteries gives rise to two different systems of secondary vessels: the first, called the system of cortical arteries, being distributed in the thickness of the pia mater, and dividing to supply the grey and white matter of the convolutions; the second or central system supplies the ganglionic centres. He then proceeds to describe, after Duret, the more minute arrangement of the blood-vessels. He refers also to the labours of M. Heubner, whose conclusions are opposed to those of Duret as to the anastomosis between arteries of different regions, and adds that M. Cohnheim supports M. Duret's opinion, saying that the arteries of the brain are, as a rule, terminal arteries, as are those of the spleen, the kidney, the lungs, and the retina.

As the parts supplied by the branches of the Sylvian artery comprehend the famous psycho-motor centres, it is necessary to describe their arrangement. There are four principal branches. The first supplies the third frontal convolution. On many occasions this convolution has been the seat of softening limited to itself. A woman, F., was admitted to the Salpêtrière attacked by aphasia; there was no trace of other paralysis, either of motion or of sensation. Aphasia in this case was the sole symptom, and the atrophy of the third convolution was shown by *post mortem* examination to be the sole corresponding lesion.

The second branch supplies the ascending frontal convolution. The third supplies the ascending parietal convolution, and the fourth the gyrus uncinatus.

It is to be observed that the second and third branches supply those two convolutions which, according to the experiments of Ferrier upon monkeys, are the seat of the motor centres of the limbs; the ascending parietal convolution being the centre for the movements of the upper extremity and in part for the lower also.

In a case within the lecturer's knowledge, this convolution was replaced by a depressed yellow patch, and the ascending frontal convolution was manifestly atrophied; now, although the optic thalami and corpora striata were perfectly intact, complete and permanent hemiplegia existed in both upper and lower extremities of the opposite side. On the other hand, in a case of destruction limited to the quadrate lobe there was no trace of corresponding paralysis; and in another case, implicating a large extent of the inferior surface of the sphenoidal lobe, there was no trace of hemiplegia during life.

The anterior cerebral artery furnishes three principal branches: the first supplies the two inferior frontal convolutions; the second supplies the convolution of the corpus callosum, the corpus callosum, the paracentral lobe, the first and second frontal convolutions, and, lastly, the superior extremity of the ascending frontal convolution; the third branch supplies the quadrate lobe.

The posterior cerebral artery is seldom the seat of thrombosis or embolism; it divides into three branches, which supply respectively (1) the gyrus uncinatus, (2) the convolution of the hippocampus,

the third temporal and the middle occipito-temporal convolutions, (3) the occipital convolutions, the hippocampi major and minor, and the quadrate lobe.*

(To be continued.)

TWO CLINICAL LECTURES ON THE CAUSES, THE PREVENTION, AND THE CURE OF LACERATION OF THE PERINÆUM. BY WILLIAM GOODELL, M.D., CLINICAL PROFESSOR OF DISEASES OF WOMEN AND CHILDREN IN THE UNIVERSITY OF PENNSYLVANIA, ETC.†

LECTURE II.

While warmly advocating the primary operation, I have not found it on the whole so successful as the secondary. Thus, by the former I have had thus far two failures; by the latter, none. This is said to be owing to the irregular surface of the rent, which prevents exact coaptation; and to the lochial discharges, which insinuate themselves between the surfaces of the wound and hinder union. My cases of failure were, however, dependent on other causes. In one, the woman, in a fit of mania, jumped out of bed to throw herself out of the window, and, of course, tore out the stitches. In the other—to which I was called by the attending physician—a violent diarrhœa set in on the third day, resulting in a recto-vaginal fistula, which I afterwards succeeded in closing. If upon removing the stitches you find no union, do not give up in despair; but try to promote healthy granulations by keeping the parts sweet and clean, and by placing in the fork of the wound a pledget of lint dipped in a solution of carbolic acid just strong enough to produce some tingling. By this means you may yet hope to save your credit by getting a bridge of granulations thrown over the anal gap, or more or less of very good union.

Supposing you utterly fail to get union by the immediate introduction of sutures, what is next to be done? Wait until the wound has cicatrised, and the woman has wholly recovered from her lying-in. Then reconstruct her perinæum by the operation which I am now about to perform upon the patient whom you saw at my last lecture.

She is in as fair health as a woman thus afflicted can be. Had she a diarrhœa or a cold, I should postpone the operation; for one untimely movement of the bowels, or the succussions from incessant coughing or from sneezing, would interfere with union. Were she nursing, I should, both for her sake and for that of the child, advise delay until the child is weaned. Nor should the operation be performed just before a monthly period, but a few days after. Early yesterday morning she took a full dose of oil, and this morning one grain of opium in order to restrain the bowels from further action. To avoid ether-vomiting, she has eaten a very light breakfast.

The instruments needed for this operation are as follows: an ordinary scalpel and a pair of scissors curved on the flat; a long-handled rat-toothed forceps, with a hole in the end of the handle to serve as an adjuster; half-a-dozen *serres-fines*; a few perforated 'number-one' shot, and a shot-compressor;

* For a short summary of Duret's anatomical observations, English readers are referred to an abstract of his papers in no. 93 of the *Journal of Mental Science*, for April 1875, p. 136 *et seq.*

† From the *Philadelphia Medical Times*, November, 1875.

a self-retaining catheter, one blunt-edged perineal needle, with an eye near its point; silver wire, several surgeon's needles with varying curves, and a needle-holder. All these instruments are, however, not absolutely essential. At a pinch, a pair of flat-nosed jeweller's pliers will answer all the purposes of a shot-compressor or of a needle-holder. An ordinary flexible catheter secured in the urethra by strips of adhesive plaster makes a very good substitute for the self-retaining catheter. Instead of a special forceps with an adjusting hole in its handle, you can use an ordinary dissecting-forceps; while the tongue-tie slit in the handle of a grooved director makes an excellent adjuster. I may also add that perforated shot are sold so cheaply by instrument-makers, that to purchase a shot-punch will be a needless expense.

Deeply etherised, our patient will now be brought in the lithotomy position to the end of this table, which fronts a good light. Her knees are supported by these two gentlemen, who also place the fingers of the free hand on each side of the vulva, and stretch it open. A third assistant attends to the etherisation, whilst a fourth looks after the sponges and instrument. Of course, one can operate with but three, or even with two, assistants, as has been my experience in the country; but it is far more satisfactory to have the aid of four. The first thing now to be done is to clip off the hairs round the rent, the next to pare its cicatrised edges. But if I should first denude the lateral surfaces, the blood would trickle down over the rectal portion and obscure it. I therefore introduce two fingers in the bowel, so as to put the over-lying and rugous mucous membrane on the stretch, and begin the operation by trimming off the rectal edges of the rent, and by snipping off with the curved scissors a thin film of its mucous surface. This dissection is continued until the raw surface extends for at least an inch and a half up the posterior wall of the vagina. Partly by snipping with the scissors and partly by paring with the knife, I now denude the right side of the rent. By encroaching inwardly on the mucous surface of the vagina, and outwardly on the cutaneous surface of the nates, there is gained on the labium a raw surface a little longer and broader than the glazed cicatrix of the original perinæum—say about an inch in breadth—and extending upwards to a point about half an inch below the meatus urethræ. The oozing of the venous blood, you see, is quite free; and this is usually the case in all operations of this kind, because the parts are vascular, and the veins valveless. Close to the lower edge of the raw surface two small arteries are springing, but I shall not tie them, lest the ligatures should act as foreign bodies, and prevent union. By nipping each one with a *serre-fine* I stay the bleeding. In all operations in which you wish to avoid the use of ligatures, you will find these little spring-clips of great service. I shall leave them on until the wound is ready to be closed.

One side of the rent being now made raw, its exact counterpart on the other side remains to be freshened. To gain accuracy in this, my assistants will for a moment remove their hands from the vulva, while I, by pressing for an instant the nates firmly together, get on the left side an exact blood-print of the raw surface of the right side. This manœuvre may not succeed if the *serres-fines* lie in the track of the wound, and you will then be guided by the eye alone. In denuding the left side I find it needful to use but one *serre-fine*. The cutting part

of the operation is now finished, and results in a large raw surface, with symmetrical outlines, wider on the posterior wall of the vagina than on the labia. This form of raw surface gives greater strength to the parts, and imitates nature; for the natural perinæum is wedge-shaped—thickest at the cutaneous surface where the vulva and anus recede from each other, and thinnest where the vagina and rectum approach each other to form the recto-vaginal septum. When the recto-vaginal rent is a bad one, the denudation of the septum should be extended a little higher up the vagina. When, also, the rectum is much relaxed, and its mucous lining prolapses, it will be well to prolong the vivification of the cutaneous surfaces on each side downward to a level with the lower margin of the anal opening. The wound is now to be closed; but before doing so, let me carefully sponge every part of the bleeding surface, to see whether any portion of mucous membrane or of skin has escaped the knife or the scissors. The recognition of such points is by no means as easy as you may think. Here, for instance, at the junction of the rectal and of one lateral portion of the wound, I find a suspicious-looking point. Whether it be a ridge of raw surface or an islet of mucous membrane, I cannot tell, and therefore, to be on the safe side, snip it off. The sutures are next to be passed; and since, gentlemen, upon the manner in which they are introduced will your success depend, I ask your close attention.

The perineal needle is entered unarmed on the left buttock, nearly half an inch below the lower angle of the wound, and about an inch from its margin. For the first inch it is plunged in directly backward. Its point is then turned towards the vagina, and made merely to protrude as far as its eye on the mucous membrane near the middle of the posterior vaginal wall, just above the uterine edge of the raw surface. The needle being now threaded with a piece of silver wire about a foot in length, and withdrawn, of course brings back with it the wire. It is then unthreaded, and entered at a corresponding point on the cutaneous surface of the other side, and the eye made to protrude on the mucous membrane at a point quite close to its fellow. The vaginal end of the wire is now passed through the eye of the needle, and, as I withdraw the latter, is left in its track. Thus you see that this first and most important stitch makes the whole circuit of the rectal portion of the wound like the string of a purse. If tightened, it will purse up the tissues from below upward, and secure complete coaptation of the anal margins of the rent. Any other method of passing the first stitch is very liable to result in a recto-vaginal fistula, which is not easily closed up.

Remember, then, this golden rule in perineal surgery: Whatever the degree of laceration, and whatever the nature of the operation,—namely, whether primary or secondary,—the point of entrance and of exit of the first suture should always be fully half an inch below the lowest angle of the wound. When the sphincter ani is torn, as in the case before us, these points will be on a level with the lower verge of the anal opening, or even a little below it. In a like manner, three other sutures are introduced at points about half an inch apart, and about an inch from the cutaneous margin of the lateral raw surfaces. In each instance the needle is at first pushed in directly backward, and then made merely to protrude on the mucous surface just above the line of denudation. As fast as each suture is placed, its ends are

loosely twisted together, so as not to become entangled with its fellows.

Although this long-handled perineal needle is the handiest instrument for the introduction of these deep sutures, it is by no means indispensable. An ordinary surgeon's needle two and three-quarters of an inch long, and slightly curved, will answer the purpose well, if held in the bite of a needle-holder. Armed with the wire, it should be passed through one side first, and made to emerge wholly in the vagina. Being disconnected from the wire, it is now threaded with the loop-end of a double silk ligature, and entered on the cutaneous surface of the other side, and made to emerge as before into the vagina. The needle being now removed, the vaginal end of the wire suture is passed through the loop, and bent over it. As the latter is withdrawn the wire follows it, and is pulled through. For the convenience of right handed physicians who are helpless with the left hand, some one has devised a left- and right-needle. The one which I show you is for the right cheek of the buttock, and can be manipulated by the right hand of the operator. Whatever the kind of needle used, its cutting edges should be blunted; otherwise a smart hemorrhage may take place from the suture-tracks, or an hæmatocele and abscess form in these very vascular parts. From such a cause, also, I have seen a good deal of ecchymosis on one cheek of the buttock.

I now remove the three *serres-fines*, and, as you see, the arteries have stopped bleeding and do not need to be tied. The general oozing of blood is, however, still free, and this I shall try to staunch by directing upon the wound a stream of ice-water through the nozzle of a syringe. The cold douche checks it somewhat, but not fully; and this is my very uniform experience in this operation. Fortunately, the adjustment of the stitches will invariably control it; indeed, gentle traction on the ends of the wire sutures at once stops all oozing. After carefully sponging away the blood, I pass the ends of the lowest suture through the hole in the handle of the forceps, and, while drawing upon them, firmly push the latter down upon the skin. This manœuvre brings the parts together very accurately, 'sets' the wire, and straightens out any crinkle in it. The adjuster being removed, a perforated shot is slipped over the ends of the wire. This is next seized in the jaws of the compressor, and, after being firmly pushed home, is clamped. Since the success of the operation depends mainly on this suture, and since the strain on it is greater than on any of the others, I shall bead the wire with a second shot, and clamp it over the first one. Each suture is in like manner secured by a single shot, and the free ends of the wires snipped off. One finger in the rectum and another in the vagina inform me that the wound is accurately closed. Carefully examining the cutaneous edges of the wound, I find between the deep stitches a point where two surfaces of skin seem doubled over upon each other, and one where two raw surfaces are everted from each other. With the forceps I gently unfold the former, and bring together the latter, and then secure the raw surfaces in apposition, by passing, with an ordinary curved needle, a superficial suture at each point. When perfect coaptation is gained by the deep sutures, the superficial ones are wholly needless. I do not know that the success of the operation depends upon the use of the shot-clamps. The mere twisting together of the wires is warmly advocated by some operators. But

I have been so lucky with the former method—one which I learned from your distinguished teacher of surgery—that I shall be in no haste to change it.

The operation is now ended; but before removing our patient to her bed, let me empty her bladder. While withdrawing the catheter, I kept my finger closely applied to its mouth, so that the few drops of urine retained within it shall not escape and trickle over the wound. I also fold up a soft napkin, put it between her knees, and bind them loosely together.

Upon the after-treatment also will the success of this operation greatly depend. In order that no drops of urine may come into contact with the wound, and by irritation prevent union, I shall have her urine drawn off. After the fifth day she may turn over on her hands and knees, and make water in that position. But the pain is so much increased by such a movement, that the catheter will generally be needed until the sutures are removed. Twice a day is usually often enough; but on several occasions I have met with an irritable bladder which urgently called for far more frequent evacuations. Should such a complication present itself, or should the nurse be unable to pass the instrument, or should your patient live at a distance, a winged catheter, or a double curved self-retaining one, may be worn. In order to prevent injury to the bladder, it should just pass the neck and not touch the fundus. By a piece of India-rubber tubing drawn over its mouth, the urine can be conducted into a vessel on the floor, and the bed kept dry and sweet. In introducing the catheter, one of two modes may be adopted. The physician either may pass it by the touch, with the woman lying on her back or on her side; or he may unbind her knees, slightly separate them, and introduce the instrument by the eye. The self-retaining catheter with its India-rubber tube should be daily removed, taken apart, and carefully cleansed. Otherwise urinary deposits will clog it up, or roughen its exterior surface, and may even produce cystitis. For instance, last year I was called into the country to operate on a perineal rent, which extended nearly one inch up the recto-vaginal septum, and was, as usual, caused by the use of the forceps. After the operation a self-retaining catheter was introduced, which, through some misunderstanding on the part of the attending physician, was not removed. At my next visit, a week later, I found, to my dismay, the lady in great pain, the catheter and tubing wholly clogged up, and the contents of an over-distended bladder dribbling away over the perinæum. On cutting the sutures, to my great surprise and great delight I found that, in spite of these drawbacks, perfect union had taken place. But for two months thereafter the lady was annoyed by so distressing an attack of cystitis, that she described herself as having fallen from the frying-pan into the fire. She ultimately got perfectly well; but it taught me a lesson which I wish to impart to you.

Our patient's bowels must also be kept locked up. Enough opium to ease the painful tension of the sutures—say one grain every four or every six hours—will probably be ample. Sometimes, after this operation, your patient will be annoyed by painful flatus. If it do not yield to teaspoonful-doses of the fluid extract of valerian, a flexible catheter should be carefully insinuated up into the rectum. Occasionally the wind will escape involuntarily; and, if your patient be fat, or lying on her back, she will think that she breaks it from the vagina, and will insist upon it that the operation is a failure. This happened

not long ago to one of my private patients. It gave her and me much needless anxiety, for when the sutures were cut, I found that perfect union had taken place. Here are the shotted sutures which were used in her case. The one beaded by two shot lay next to the anus; it is the longest one, and measures just 3.75 inches. I exhibit it especially to show you how long it is, and how much flesh it must have enclosed in its loop.

The only local dressing needed by our patient will be a pledget of lint dipped into cold water. On the third day, but not earlier, lest the process of immediate union should be hindered, I shall have the vagina washed out twice daily by a weak solution of carbolic acid, or by a claret-and-water-coloured solution of the permanganate of potassium. These injections will soothe the parts and correct the bad odour of the discharge. She will be enjoined to keep very quiet in bed. She need not rigidly lie on her back, but may, with help, turn over on her side. Her diet will be milk, toast, eggs, and broth.

Without reference to any specified time, the sutures will be removed as soon as they become loose,—that is, from the seventh to the ninth day. I shall not first snip all the sutures and then proceed to remove them, but shall cut one at a time and draw it out before touching the others. I shall also begin at the lowest wire,—the one next to the anus,—so that during the removal of this the most important one of all, the parts may be firmly braced together by the upper sutures. Its fellow will next be cut and drawn out, and so on until all are removed.

On the tenth day, or on the twelfth, if the line of union be weak, small doses of a saline cathartic or teaspoonful doses of castor-oil will be administered to our patient every four hours, until she feels an urgent inclination to go to stool. Then, in order to insure the liquefaction of the contents of the lower bowel, an injection of soap-water will be given. She will also lie on her back, with a shovel bed-pan under her person, and be instructed to restrain all tenesmic efforts. Should hardened fæces over-distend her rectum, the nurse will break them up either by her finger, a hair-pin, or the handle of a spoon.

At my next visit I shall carefully inspect the parts, to see whether the wound has been at all torn open by over-stretching. Should, unfortunately, a fistulous opening in the recto-vaginal septum remain, it may, if small, be treated by an application of the *acetum cantharidis* or of fuming nitric acid, followed by coaptation with *serres-fines* or with sutures, and, these failing, by the actual cautery. If the fistula be of any size, no treatment will probably be successful other than that of cutting through the united portion and of doing the original operation over again. Although the operation may be a successful one in respect to the union of the raw surfaces, yet usually the control over the sphincter does not at once return; sometimes, though rarely, it is not wholly regained. You must, therefore, be careful how you commit yourself to the promise of a rapid or a perfect cure.

After the bowels have been thoroughly opened, they should be again locked up for four or five days more, and then be daily kept open by a mild aperient. The patient should have her knees bound together, and stay in bed for at least two weeks, and for a week longer should not go out of her room. During this time she should walk about but little, and keep her knees close together. Such precautions

are necessary, in order that the newly united tissue may not become relaxed by over-stretching.

In your text-books you will find described and illustrated different operations for the restoration of the functions of the sphincter ani, and for the reconstruction of the perinæum—such, for instance, as the quill-suture, division of the sphincter, etc. But I have restricted you to one which recommends itself not only for its simplicity, but also for the very remarkable success which attends it. It, further, is an operation which, in conjunction with the amputation of the cervix uteri, you will find very valuable for prolapse of the womb, when the perinæum is anatomically whole but functionally imperfect.

EBERTH ON DISEASES DUE TO INFECTIVE MYCOSIS.

In the number of *Virchow's Archiv* for December 1875, is a paper by Eberth, which is occupied with the minute detail of three cases, all of them supposed to have originated in an abnormal local development of micrococci, and to have terminated fatally by means of the subsequent infection which they produced. Two are described as cases of primary infective periostitis, or, as it is known to us, of the acute periostitis and necrosis of young people; the third as one of endocarditis of parasitic origin—acute ulcerative endocarditis.

Quoting and adopting Lücke's words, the author remarks that of the disease which is known commonly as 'diffuse spontaneous osteomyelitis,' there is no comprehensive knowledge, and for it no universally accepted name.

Nearly all authors, however, agree so far that this is distinguished from other diseases of the bones by its malignancy and early assumption of typhoid characters; by its association with a pyæmic or rheumatic affection of the joints [and, as might have been added, by a particular distribution of metastatic abscesses in the viscera.—*Rep.*]; and by its appearance at first as a local affection, of which the outcome is often fatal; or if not, it leads to a separation of the epiphyses and to death of the bone.

The local process nearly always assumes the form of an osteomyelitis or periostitis, associated with severe pain and fever, and then comes a phlegmonous suppuration of the tissues enveloping the bone.

Resolution may occur, or necrosis, as just stated, with abscesses in various organs.

So striking is this secondary formation of abscesses, unassociated as it is with any wound, that some have held to the idea of an idiopathic pyæmia; but this view has not met with general acceptance. Since the recognition, moreover, of the rôle which micrococci play as agents for the production of the infective inflammatory products of pyæmia, Klebs and Von Recklinghausen, at the suggestion of Lücke, have attempted to solve the question whether micrococci are to be found in inflammatory foci with which at no time has there been any atmospheric contact—and they have proved the existence of such vegetable organisms both in the primary and secondary foci in two separate cases.

Upon the strength of these facts, Lücke argued that, inasmuch as cases of acute periostitis are marked by changes which in their course and pathological character have the most complete analogy with traumatic pyæmia, there is ample ground for assuming that they too, like it, result from infection.

The following cases give additional support to this hypothesis. [They are reported in the original at considerable length, but are abridged as much as possible here.—*Rep.*]

A factory workman aged twenty, of delicate constitution, though he had never been ill, had latterly had an excess of work, which had tired him very much. He was at work as usual on February 13, 1875, when he suddenly at 1 P.M. felt chilly and was obliged to take to his bed. The feeling of cold subsided towards evening, and he then noticed for the first time a rather extensive flush on the left instep. For this, he was unable to suggest a cause. He had considerable pain in that foot, and also from thence to the knee-joint. He chiefly suffered, however, from a feeling of fatigue and a general soreness whenever he was touched. He was now seen by a medical man, who found him with severe fever, loss of appetite, repeated vomiting, and disturbed sleep.

He lived in poor circumstances, the house in which he was being new and still damp. The general hygiene of the place was not good. He was brought to the hospital five days after the commencement of his illness, in a condition which rendered the formation of a correct diagnosis impossible. He was quite wanting in sense. He would put out his tongue when told, but could give no information either of his previous history or present state. Temperature over 105° Fahr. ; pulse 108 to 140. Respiration was laboured and very frequent, now and then clipped and irregular, as if it caused pain. The heart's action was very frequent, but there was no bruit nor perceptible rub, and no increase of the cardiac dullness. The chest was filled with râles (œdema of the lung) which precluded any reliable examination of the contained viscera. The splenic dullness was diminished rather than increased. The left lower extremity was swollen in its whole length ; some distended venous radicles were visible in the region of the left epigastric vein, but no thrombus could be felt. The left foot was swollen and intensely painful. Large doses of quinine were administered, but he died on February 18, the temperature falling slightly the last few days of his life. The diagnosis which appeared most probable was septicæmia with infarcts in the lungs, probably starting from some bone-affection.

Necropsy, fourteen hours after death.—There was no rigor mortis. Superficial extravasation of blood was found in the subcutaneous tissue of the dorsal surface of the left foot. A small quantity of pus was found beneath the periosteum of one of the tarsal bones and in one of the tarsal joints, the affected bone being deeply injected and its surface rough. The left thigh was much swollen, some of the muscles being œdematous. The periosteum throughout the whole shaft of the femur was infiltrated by pus, which in one spot had collected into a small abscess. Close to the periosteum of the lower third of the femur, which was rather swollen, but showed only a little purulent infiltration, was a small vein full of fluid pus running upwards some distance till it was finally lost in the loose periosteal tissue. The periosteum was separated from the surface of the bone by a large quantity of reddish pus, the membrane thus forming a sac round it. At only one spot on the posterior face was it still normally adherent. The bone was very pale, but here and there tinged, as if by imbibition of the colouring matter of the blood, slightly red. The lower fourth of the femur was covered by a cream-like yellow material

which had the appearance and consistence of marrow. The left knee contained clear synovia ; the cellular tissue around it being œdematous. In the muscles of the right thigh was one minute abscess. The extreme infiltration of the periosteal tissue with pus displayed itself in frequent long lines extending far into the deep muscles. The transverse section of the femur showed a pale cortex, and an œdematous state and violet injection of the medulla. The pale medullary parts were grey-yellow, and gradually lost themselves in the surrounding tissue. There were no abscesses. In the right profunda and one of the other veins of the thigh, clot was adherent to some of the valves. The intermuscular tissue of the right arm was œdematous. The anterior mediastinum was œdematous and injected. The pericardium contained some blood-tinged serum, and its two layers were plastered with shaggy membrane ; and miliary abscesses were scattered through the muscle of both ventricles. The endocardium was healthy. Both pleuræ were inflamed. Both lungs contained hæmorrhagic infarcts and patches of lobular pneumonia both in their substance and superficially, and delicate zig-zag outlines were seen in these organs which corresponded to lymphatics or blood-vessels full of pus. In the left lung was one abscess. The spleen was not large. The kidneys showed many dark red points superficially, which had the appearance of hæmorrhagic Malpighian corpuscles. The stomach contained many superficial follicular ulcers.

Summary.—Suppurative periostitis of the left femur with phlebitis of a periosteal vein ; abscesses in the neighbouring muscles, suppurative periostitis of one of the tarsal bones ; suppurative pericarditis and myocarditis ; suppurative pleuritis with hæmorrhagic infarcts ; and commencing abscesses in the lungs.

The microscopical examination of the blood showed a small number of isolated spheroids of the appearance of the diphtheritic micrococcus, but of which the nature could not certainly be ascertained, because they were too few to admit of the application of chemical reagents. But micrococci were present in extraordinary numbers in those parts of the pericardium and muscle which bordered upon the abscesses in the heart, and also in those recently inflamed spots which were covered by fibrin. The parasites were arranged partly as large columns, partly as a generally diffused infiltration of the implicated tissue. Within the abscesses of the cardiac muscle too, small balls of like organisms were found, though they required long search for their discovery, because of the quantity of pus-cells. That they were really parasitic, and not mere masses of detritus, was proved by their behaviour with acetic acid and potash. Their contour remained unaltered, though they became paler in colour. Similar formations were recognised on the pleura over the hæmorrhagic infarcts ; and the whitish lines in the crepitant and blood-gorged lung were found to be capillaries and small arteries, which were often freely plugged with embola of fat. Near and between the fat-plugs were small and large balls of micrococcus. Again, in the reddish-gray hepatisation and the partly softened hæmorrhagic infarcts, the presence of fungus and fat embola was proved without exception. The vessels were partially torn through, and micrococci and fat-plugs were seen enveloping each other both in the alveoli among the embryonic cells and blood, and in the lung-tissue.

The frequent occurrence of fat and micrococci in one and the same vessel points to some common source of origin for both kinds of embolon. For, on the supposition that they are derived from separate foci, even if it be granted that both might in their course along the blood-vessels be arrested in one particular vascular area, it is very improbable that both fat-embolon and micrococcus-embolon would in almost all instances be found in intimate association. Therefore the abscesses in the heart, or the suppuration between the femur and its periosteum, must either one or the other have been the source of both.

The former extended into the pericardial cavity, and it could therefore easily happen that, through the destruction of the subpericardial tissue by suppuration, which had been caused by micrococci, fat should be taken up with the micrococci and carried about by the blood-vessels or lymphatics. The derivation of embola from such a source is, however, the less plausible, seeing that the great quantity of fat displaced as embola bears no proportion to the small size of the heart-abscesses. And on the other hand a thick layer of medulla covered the denuded femur. This would find its way in the outer part of the periosteum, now converted by suppuration into a soft pulp, into one of the veins already charged with pus and micrococci; and this was obviously the main source for both fat and fungus embola.

The pus had denuded the femur of its periosteum over a large area, and at the same time provided it with an enveloping sac of great capacity. By this means the vascular communications between the medulla and periosteum were destroyed, and the continuity of the medulla of one part with that of another severed also. Free medullary fat could thus very easily find its way into any ruptured vessels; and this would be the more likely, because of the pressure exercised towards their open mouths by the œdematous swelling of the medulla. No micrococci were found in the medulla of the femur, neither could their existence be proved with certainty in the abscess about the left tarsus nor in the abdominal viscera.

But if the primary focus of disease, from which all the metastatic processes are to be traced, was femoral, then the occurrence of micrococci in the inflamed periosteal veins needs to be explained. We are not inclined to adopt the opinion that the development of fungus was second to a primary suppurative affection, because, though such a possibility cannot be combated, yet we frequently see just the opposite, viz. suppuration following in the train of the invasion of a part by fungus.

It is very probable, then, that micrococci were the cause of the periostitis; but, if so, how did they reach the periosteum? One can hardly admit that they come by accident, if they play an important part in the process. Moreover, not much is done towards the elucidation of the subject, if we determine the localisation of these parasites in the inner organs to be entirely dependent upon accident. And if we look over many cases in which the etiology is still obscure, we shall find that some weak spot is frequently present by which these parasites obtain a basis of operation against other parts—here a wound, there some inflammatory and softened state of a mucous surface, possibly even a mucous membrane which has suffered some small loss of epithelium. I therefore follow Lücke's explanation of the ostitis due to mycosis, and hold that, in consequence of

injury or catarrh, some local disturbance of the circulation occurs, and that from such places both deteriorated blood and micrococci become diffused through the body.

With regard to the course which the fungus took in this case, failing an open wound or any primary intestinal affection, and seeing that the pulmonary foci were manifestly secondary, I must have recourse to the hypothesis which seems very probable, that the organisms permeated the body with such rapidity from the lung or intestine, that the very rapidity of the process allowed no time for the development of the usual local changes. Perhaps the numerous recent catarrhal ulcerations of the stomach would point to infection by means of the gastric mucous surface.

Although no fungus-colonies could be demonstrated in this part after a careful search, yet one cannot but suspect that through some such door micrococci found their way, and that, favoured by some commencing circulatory disturbance, they developed into larger colonies in the periosteal vessels, whence in turn originated the embolic abscesses and the inflammatory changes of the lung and pleuræ.

In another case of suppurative periostitis of the humerus without the formation of visceral abscesses, the symptoms were so similar to those in the one just detailed, that I could not but consider it also as an example of infective periostitis. From the report, the following points may be recorded.

A smith, aged eighteen, of moderately strong build, was admitted to the hospital on December 17. He could just give his name and age, but could not tell of the previous course of his disease. He was flushed, and rather livid. He spoke very slowly, as if conversation were a trouble to him, and during the examination he sometimes laughed convulsively. His general appearance betokened meningitis, or typhus with pronounced nervous symptoms. The chest was normal, respiration laboured. He offered resistance to passive motion of the right arm, and appeared to suffer pain when it was drawn outwards, but the origin or exact seat of this could not be detected. The heart's action was very frequent, and its tone muffled. Splenic dulness was much increased. The temperature ranged from 104° Fahr. to 109° Fahr.

Resumé.—Very high continued fever; great splenic enlargement and meteorism. The most probable diagnosis was one of typhus, or ulcerative endocarditis.

At the necropsy, seven hours after death, the right lung was found to contain near its surface a soft round hæmorrhagic focus, with some œdema, grey hepatisation, and purulent bronchitis of the smaller tubes. The spleen was enlarged. The tonsils were rather swollen, so also was the mucous membrane of the base of the tongue. There was slight injection of the mucous membrane of the small intestine over a large area, and a little swelling of the follicles of the large intestine. The cellular tissue over the biceps of the right arm was very œdematous, and the hinder aspect of the upper half of the periosteum of the humerus thick, and separated from the bone, a small quantity of blood-tinged purulent serum lying between the two. The bone was rough. Near the head of the bone was a thin layer of granulation-tissue, somewhat intimately adherent to the bone, by sprouting from many open lacunæ. One of the veins coursing over the capsule of the joint was plugged with grey-white firm thrombus. The joint-capsule was free. The medulla was of clear red colour.

Anatomical Diagnosis.—Fungous periostitis of the humerus, with erosion of the bone; partial suppurative periostitis, and separation of the periosteum; thrombosis of a capsular vein; hyperæmia and œdema of the lung, with hæmorrhagic infarcts; lobular pneumonia, atelectasis, bronchitis.

The last case had, like those described by Lücke and others, the general character of typhus. It differed from them in the small amount of local disease of the bone and the absence of secondary abscesses. The process in the upper arm was obviously already undergoing repair, as shown by the soft granulation tissue under the periosteum. The lung-affection (atelectasis, hæmorrhagic infarcts, lobular pneumonia), was most probably caused partly by the severe bronchitis, partly by embola from the venous thrombosis in the neighbourhood of the right shoulder-joint. Micrococci, indeed, were nowhere to be found, either in the diseased bone or in the remaining viscera. But this is hardly to be wondered at, since the primary disease of the bones had for the most part passed away. The absence of the old and recent changes in the remaining organs, which are sometimes to be attributed to micrococci, will but little astonish us, since such secondary mycetic processes are not more constant than is a simple embolism after a primary thrombosis. It appears most probable that the fatal result in the last case was brought about by the lung-affection, which, to all appearance, had developed, at least partly, independently of the bone-disease.

Eberth concludes these two cases by saying that, though but a scanty contribution, he felt bound to publish it, since, excepting the observations of Lücke, Klebs, and von Recklinghausen, no further anatomical inquiries on the course of infective otitis and periostitis have been brought forward.

Fungous Endocarditis.—A servant-maid, aged twenty-five years, had suffered eight years before with articular rheumatism, for which at that time she had lain long in hospital. Since then she had never been thoroughly well. Her more special complaint was of swelling of the foot, which made its appearance after but moderate exertion, and even without it, towards evening; which was gradually increasing; and which caused much pain in walking. She had never noticed this before the rheumatism. She had also very frequent pains of wandering rheumatic character in the hands and feet. Moreover, very considerable sweating had commenced since she had been confined to the house. She complained of no palpitation, cough, stomach-affection, headache, or vertigo. In the week previous to her admission into hospital, she felt herself very unwell. The feet were swollen, and her general condition, besides the fixed local pain, had deteriorated. For this the patient gave the credit to long absence of the menses, and she had taken on that account several hot foot-baths.

On April 22, not long after a hearty dinner, which to her was unusual, and while engaged in raking up wood, with her body bent forwards, she suddenly fell to the ground. On attempting to rise, it was observed that she could not walk, and dragged herself to the bed. Those near her were positive that the patient was not at first deprived of consciousness. She opened her eyes, if spoken to, and understood apparently what was said to her. No fits or convulsions were observed. Whether the patient made any movement with the right arm or leg, was not noted outside the hospital, but she surprised those around her by holding the right hand fast in her left.

Later, violent vomiting set in, which continued till evening. Fluids, such as tea and milk, which were administered, were swallowed without difficulty, but directly vomited again. Towards evening the vomiting ceased, and she now lay with closed eyes and in deep insensibility, and so remained till her admission.

She then lay apathetic, but not completely insensible; no coma, properly speaking, was present. This condition lasted for thirty-six hours. She then began to arouse in some slight measure. There was no ptosis or strabismus; the right pupil was moderately contracted, it reacted better than the more widely dilated left. The dilatation of the latter pointed to an affection of the oculo-motor nerve and of its fibres which controlled the movements of the pupil. The lips were livid. The left angle of the mouth was somewhat lower than the right, but any considerable difference in the tone of the lips could not be proved.

The patient made some movements at times, but only with the left extremity. The right arm when raised fell back immediately. In the same manner the right knee when flexed sank back again at once. Moderately strong heart-movements were visible. The impulse in the fifth intercostal space in the nipple line was strongly perceptible. A very loud systolic sound was heard near the mitral valve, and the same was also audible in the aorta.

On April 25 the condition of the patient, so far as concerns the want of intelligence, was somewhat worse; at least, there were no signs of attention to be perceived, or of any attempt at reply to queries. The pupil of the left eye was wider than it was on the previous day, and immovable; that of the right eye was narrow and also without reaction. There were no convulsive movements; no rolling of the eyeballs; they remained quiet. In this state their axes diverged considerably; both eyes turned outwards, and the right did so more markedly than its fellow. This indicated some insufficiency of the internal recti. The eyes were kept shut; and since absolutely no spontaneous movement occurred, it was not possible to determine whether ptosis were present or not.

No retinal hæmorrhages could be seen on ophthalmoscopic examination. The blood-supply to the retina was moderate; the veins were overfull; the arteries nearly empty. The left optic papilla had an indistinct margin, but it was more distinct on its outer side. She had the *Stauungspapilla*. There was no venous pulse.

The patient was restless during the examination, and made reflex movements of resistance, but still only with the left arm and leg. With the right only a feeble movement of the hand could be perceived. The features became red and pale by turns. Pulse forty-four, quickened to fifty-two by excitement. The heart's impulse was forcible. The area of dullness was increased, and there was a loud rough prolonged bruit over the mitral valve. The second sound was indistinct. In the aorta was a shorter softer systolic bruit, and the second sound was somewhat lengthened. Over the tricuspid valve was a feeble systolic bruit; the second sound was good. Nothing striking was perceived in the veins of the neck. The patient swallowed badly. Reflex movements were almost lost; voluntary movements were failing.

The subsequent symptoms were involuntary evacuation of the excreta and then deep coma. She was completely feverless till April 26, when the tempera-

ture rose to 102°. She died on the 27th, with well-pronounced œdema of the lungs.

Diagnosis.—Embolism of the left middle cerebral artery; hæmorrhage compressing the left third nerve, and possibly also the two facials.

Necropsy, three hours after death.—The dura mater was injected. The arachnoid was dry; the left hemisphere was more voluminous than the right. In the right posterior frontal convolution was a lentil-sized stellate scar, of brown colour and situated superficially.

In the neighbourhood of the left carotid was a shrunken spot about a centimètre in diameter on the surface of the brain, which was covered by a layer of tenacious grey-red pus. The subarachnoid space was infiltrated with pus at the same spot and to a similar extent. Flaky reddish-grey pus crossed the left optic tract and nerve and the third nerve. The latter was wasted and gelatinous-looking. The left carotid artery for a centimètre in length, at its exit from the carotid canal, was completely plugged by fine decolorised clot. The commencement of the corresponding middle cerebral artery contained pus, the wall of the vessel being whitish-yellow and charged with pus. A small collection of pus was found on the surface of the left hemisphere.

The left lateral ventricle was dilated, and the hemisphere including the central parts was extensively softened into a white pulpy material.

In the pericardium was a moderate quantity of rather blood-tinged serum. The heart was enlarged. The left ventricle was strongly contracted. On the hinder face of the visceral layer were small punctiform ecchymoses. In the right and left auricles were much fluid blood and soft clot. The tricuspid and pulmonary valves were free; the mitral was much contracted and thickened, and a very delicate granular deposit fringed the line of closure of the valve, and also the rather dull endocardium of the left auricle here and there. On the free edge of one of the flaps of the mitral valve, were two old polypoid fibrin-clots as large as hemp-seeds. Besides these, the tendinous cords of the retracted mitral were for the most part thickened and changed into cylindrical strings. Two of the tendons floated free and had swollen ends covered with clots. The endocardium of the left ventricle was thickened and dull. The left ventricle was greatly hypertrophied, of speckled appearance, and had numerous studded deposits of connective tissue throughout the whole thickness of its muscle wall.

The lower lobe of the left lung contained grey-red patches of soft lobular hepatisation, varying in size from a pea to a cherry. The smaller bronchial tubes on the right side were plugged by pus, and the lung-tissue corresponding was collapsed and in a state of grey-red hepatisation.

The spleen was normal in size, but distorted from adhesions to the diaphragm. The surface corresponding to these was puckered. The serous surface was thickened. The substance was firm. The Malpighian corpuscles were distinct but scarce. Both kidneys were somewhat scarred, and contained numerous miliary abscesses in the cortex and pyramids.

Anatomical Diagnosis.—Old endocarditis and thickening of the mitral valve with recent fibrinous, and probably micrococcous deposit. Old and recent endocarditis. Thickening of the chordæ tendinæ. Hypertrophy of the left ventricle, with chronic myocarditis. Embolism of the left intracranial carotid;

circumscribed suppurative meningitis in the neighbourhood of the plugged artery; softening of the brain. Purulent bronchitis; atelectasis and lobular pneumonia. Wasting of the kidneys. Hæmorrhages into the kidney and commencing abscesses.

From the result of the necropsy, it could hardly be that in this instance the embolism of the intracranial carotid was occasioned by a bland plug. For not only was the wall of the artery in the region of the embolism infiltrated by pus, but the suppuration had extended to the neighbouring optic and third nerves.

In the case of embolism occasioned by *indifferent* fibrin-plugs, no such remarkable suppurative arteritis or periarteritis is evident; their presence therefore suggests that the clot on the mitral and endocardium of the auricle, whence the carotid embolon obviously came, was not simply a portion of detached clot, but in addition to this possessed some irritant (inflammation-exciting) property to which each suppurating spot owed its existence. The microscopical examination, which was undertaken three hours after death, showed that the soft granular deposit on the endocardium of the auricle was due in great measure to large and small micrococcus-colonies and to very delicate fibrinous deposits; while, on the other hand, in the larger valve-clots the fibrin preponderated, while the micrococci only lay upon the surface. The endocardium of the left auricle was also, at least superficially in the region of the fibrin-deposit, thickly studded with micrococci. The clot upon the mitral valve was composed of moderately fresh fibrin superficially, though of older date in its substance. Here and there it was covered with micrococci. In some places, the well-known finely granular softening was present. In one spot, micrococci lined clefts and fissures which stretched from the surface to the centre of the clot.

When treated with an alkali, the parasites underwent no change, though the softened finely granular fibrin lost its colour, and finally disappeared.

The mitral and the auricular endocardium were moderately thickened, the surface for the most part smooth.

The wall of the carotid in the region of the embolon showed a large collection of pus-corpuscles. The naked eye had previously detected this infiltration of pus. The section of the artery which was made immediately after the removal of the brain from the alcohol in which it had been hardened, showed an old firm fibrin-plug whose outer layer was richly studded with micrococci, and whose surface was enveloped in a thick coating of similar organisms.

As has been shown in the report, there existed an old endocarditis with fibrinous coagula and an entirely new and obviously primary mycosis of the valve.

[The value of reports of cases such as these can hardly be over-estimated at the present time, when some attempt is being made to assign to organisms like micrococci their proper place in the rôle of pathological processes. It is indeed at first sight almost a reproach to us that, since the diseases which these reports portray are by no means uncommon, the questions raised by them, not now for the first time, have not ere this been settled. But in justice to many it must be said that the want of recorded cases is probably due, not to the paucity of observations, but to the fact that observers hardly as yet feel satisfied in forming an opinion whether micrococci are the cause or the effect of infective in-

inflammations. Eberth appears to have decided in favour of the potency of micrococci as originators of inflammatory changes; but the arguments he uses are by no means comprehensive enough to carry anything like conviction to a wavering mind. To take for instance the case of ulcerative endocarditis; it is quite true that the vegetations on the valves of the heart in that disease may be crowded with micrococci; that they are so, the reporter has verified in several instances. But he is equally convinced that the blood of such patients does not usually contain anything of the same nature, and the latter observation is surely irreconcilable with the supposition that the diseased valves are spreading these hurtful bodies in all directions. He has also examined, as part of the larger question of the relationship between bacteria and pyæmic processes generally, the blood of several cases of acute periostitis, and in those also nothing like micrococcus could be detected. The appearance of the blood in the two cases—ulcerative endocarditis and acute periostitis—is very different; in the latter it is normal, or nearly so; in the former, on the other hand, it is quite characteristic of the disease, for the blood is usually crowded with minute motionless particles. But that these are not micrococci, is evident by their want of resistance to chemical reagents; and they are most probably formed of degenerating fibrin whipped from the diseased surfaces. —*Rep.*]

J. F. GOODHART, M.D.

ANATOMY AND PHYSIOLOGY.

STIRLING ON THE CUTIS OF THE DOG.—The *Reports of the Royal Saxon Academy of Sciences* for 1875 contain a contribution to the anatomy of the cutis of the dog, by Dr. W. Stirling.

1. *Methods.*—The skin to be examined was stretched over a glass ring and digested in artificial gastric juice, prepared by adding 0.2 per cent. of hydrochloric acid to carefully prepared glycerine-pepsine. The temperature was maintained at 38° to 40° Cent. (100.4° to 104° Fahr.) The fluid was renewed every two hours and digestion was generally sufficiently advanced in four to six hours. The skin, still on the ring, was then washed with water, and placed in distilled water for twenty-four hours. During that time it had swelled to four to six times its thickness, and was in a suitable condition for making sections which could be examined at once or after being stained.

The leg was injected with a clear watery solution of Berlin blue from the femoral artery, with a pressure of 100 to 200 millimètres of mercury, a cord being screwed tightly round the limb above the point of injection. The solution was allowed to flow into the vessel as long as it would go—usually for a period of many hours. By this process the vessels were filled with the blue, whilst the water passed into the tissues and produced oedema.

2. *Results.*—In the dog the bundles of fibrillary tissue are mostly parallel to the surface of the cutis, and are held in their position by the elastic fibres which interlace amongst them.

There are two kinds of cells in the stroma of the cutis. The nuclei of the one kind are spindle-shaped, of the other round. The cells with round nuclei are mostly found near the vessels, that is, in the superficial part of the cutis and in the subcutaneous tissue.

It is suggested from their position that they are lymphatic cells.

When digestion is far advanced, part of the *Zell-platte* which belongs to the cell with spindle nuclei, and which the author considers to be analogous to the *Zell-platte* of Schweigger-Seidel, is sometimes preserved. When digestion is not so far advanced, and the arrangement of the fibrillary bundles is undisturbed, it can be seen that the long axis of the spindle nucleus is parallel to the direction of the bundles, and that the spindles lie between the bundles. It is inferred that the clefts between the bundles form spaces which are filled with lymph-fluid.

As in the human skin, whilst the hair-follicles, fat-lobules, and sebaceous glands have each a separate blood-supply from a small artery, the connective tissue between the fat, muscles, and glands, is destitute of capillaries.

The sweat-ducts (the popular idea that in dogs there are no sweat-glands is a mistake) open into the hair-follicle above the sebaceous gland, but at some distance from the epidermis. The sweat-gland is composed of a layer of flat cells, a structureless membrane on which these lie, and then the cells of the gland. A similar layer of flat cells has been described in man by Heynold, but he says that they are followed immediately by the gland-cells.

The erector pili is composed of elastic fibres, which spring from a network which surrounds the hair-bulb, and which pass in a tract to the surface of the cutis, where they spread out and join the other fibres of the part. Between and amongst these elastic fibres, the smooth muscle-cells are insinuated.

After prolonged digestion the bundles of fibrillary tissue undergo a change by which they present an appearance like that usually presented by muscular fibres. This is due to the gelatinous substance being dissolved, a sheath remaining, which, being thrown into transverse folds, simulates the transverse markings of muscle. Both the larger and the very fine bundles have such sheaths.

When digestion is continued until the skin is reduced to a pulpy mass, what remains of the capillary blood-vessels is a very delicate structure composed of rows of spindle-shaped cells.

[Biesiadecki (Stricker's *Handbook*) describes in the human skin spindle-shaped cells and also round or oval cells similar in size and form to colourless blood-corpuses. The admirable plates which accompany Dr. Stirling's paper enable the reader to form an independent opinion regarding the cells which he describes. The spindle cells figured resemble similar elements lately described by the reporter as existing in the cornea, and their arrangement as regards the fundamental substance is the same in both instances. The remains of the *Platte* described in Dr. Stirling's text as being sometimes adherent to the cell is nowhere shown in the drawings, and the analogy with the *Platten* of Schweigger-Seidel in the cornea or the cells described by Ranvier in tendon, instead of being supported by them, seems to the reporter to be contraindicated. Schweigger-Seidel's description of his *Zell-platten*, and Ranvier's of his tendon-cells, can hardly be made to coincide with the fine anastomosing spindle elements figured by Dr. Stirling.

If the other cellular elements figured be nuclei, which, from the appearance represented, seems probable, then nothing is shown of the cells to which they belong; but, from the form and size of the nuclei, the reporter infers that they belong to flat

cells, and to these latter the analogy with the *Platten* of Schweigger-Seidel would, he believes, be more applicable. If they be not nuclei, then they can only be lymph-cells; but this does not coincide with the description in the text, which states that the cells have round nuclei. Only one round substance is figured for each element.

The isolation of the sheaths of the bundles is one of the most important results obtained by Dr. Stirling's method. The existence of a sheath investing the bundles of connective tissue has been maintained by several histologists on various grounds, but no evidence of it so complete as that given by Dr. Stirling has been hitherto found.—*Rep.*

G. THIN, M.D.

GUTTMANN ON THE IMPULSE OF THE HEART.—In Virchow's *Archiv*, Band lxx. p. 537, appears a paper on this subject by Dr. Paul Guttman, of Berlin, who entered into the discussion in consequence of recent articles by Marey, Wilckens, and Jahn. The first of these follows Arnold, Kiwisch, and Ludwig in explaining the cardiac impulse by the systolic hardening of the muscular walls. Wilckens attributes it, as did also Kornitzer in 1858, to a movement of rotation from left to right; while Jahn considers that the recoil of the heart, as well as its rotation, is concerned in the production of the impulse. The recoil theory of Gutbrod and Skoda explains the beat of the heart by the fact that the pressure, which during diastole is exerted equally on the walls of the ventricle, at the moment of systole becomes less at the arterial orifice than at the apex of the heart opposite. The heart is consequently driven away from the arteries with a force proportional to the velocity and quantity of the outflowing blood. The objections to this theory, that the ventricular walls, on which the balance of pressure would fall, themselves by their contraction produce a pressure to oppose it, and that the heart's apex is not opposite in a direct line to the arterial orifice, have been met by Skoda and others. The earlier experiments, by which it was attempted to ascertain either by ligature of the great veins, or by compression of the main arteries, what would be the result on the heart's action of preventing the systolic discharge from the arterial orifices, were not conclusive, because the pulmonary veins were left untouched. This omission was supplied in an experiment by Jahn, who ligatured the *venæ cavæ* and *pulmonales*, and in one by Guttman, who tied the arteries in one ligature, and all the veins in another. Both experimenters saw the downward movement of the heart cease the moment the ligatures were tightened. But these results may be also claimed as supporting a theory, suggested by Bamberger, that the locomotion of the organ in a downward direction is due to the elongation of the great arteries by the blood discharged into them, as well as Kornitzer's extension of this view, according to which the elongation of the vessels causes not only descent, but, in consequence of their spiral course, rotation also. On the other hand, the arguments for the latter explanation, founded on the pathological conditions of the organ, are not conclusive. The greater elongation of the great vessels, which must result from the more forcible injection of blood by a hypertrophied heart, would affect only the apex, and would not lead to the extended impulse observed; further, the occasional absence of an apex-beat in cases of considerable stenosis of the aorta, is no better explained on Kor-

nitzer's theory by the retardation of the flow into the aorta, and the necessarily slighter elongation of that vessel, than it is on the theory of Gutbrod and Skoda, by the slight difference between the pressures at the two extremities of the heart, when the usually rapid fall at the aortic orifice is prevented by stenosis. Finally, Guttman is of opinion that *no one* of the different theories explains *all* the phenomena, and that a satisfactory explanation of all the pathological conditions of the impulse of the heart will only be arrived at, when both the 'recoil' and the 'increase in size of the contracting heart' are regarded as equally well established co-operating causes. The recoil in the systolic movement of the heart downwards and forwards explains the apex-beat; the systolic hardening of the muscles of the heart-walls and the increase in its antero-posterior diameter explain the impulse of the base. That the latter is not usually observed under normal conditions, but only the beat of the apex, depends on the fact that the apex lies immediately against the wall of the chest, while the base is covered by lung, which hinders the conduction of its impulse to the surface. This conduction is further opposed by the backward movement of the base during systole, by the resistance of the ribs, as well as by the considerable thickness of the chest-wall (pectoral muscle and adipose tissue) at the points corresponding to the position of the base. Where these unfavourable conditions are not present, *e.g.*, in children with thin and yielding thorax, and in all cases where the heart lies in contact with a larger surface of the chest in consequence of retraction of the edge of the left lung (in phthisis of the left side), as well as in hypertrophy of the heart, then an impulse is perceived at the base as well as at the apex—the heart beats over a greater extent.

JACOBSON ON THE DISTRIBUTION OF HEAT IN THE COURSE OF FEBRILE DISEASES.—Dr. Louis Jacobson, of Berlin, gives the result of his observations in a paper published in Virchow's *Archiv für Pathol. Anat.*, Bd. lxx., Heft. 4.

The researches were undertaken with the object of testing the truth of Hankel's proposition, that 'the difference between the temperature of the axilla and of the surface of the body in the same individual is less in the febrile condition with increased temperature, than in the non-febrile state.' Hankel had recourse to thermo-electricity for the more accurate determination of the surface-temperature, making use of iron and German silver wires, soldered together and twisted into coils, which were laid upon the skin and protected from exposure by cupping-glasses. His observations were made on a case of gonorrhœal synovitis of the knee, on one of mild bronchitis with coryza, on one of tertian ague, and one of slight pneumonia. The surface-temperature differed least from that of the axilla in the cold stage of ague, and once indeed was nearly the same. Jacobson has made some modifications in the construction of the instrument employed. His elements consist of German silver and steel wires, soldered together, and pointed so as to form needles, which can be easily inserted beyond the soldered portions into the most superficial layers of the cutis. He gives tables of observations on ten cases, including rheumatic pericarditis and pleurisy, typhoid fever, pneumonia, articular rheumatism, and tertian ague. The temperature of the axilla was compared once or twice daily with that of the skin, in three or more of the following situations:—the chest, the abdomen

(right hypochondrium), the ball of the thumb, the thigh and the upper arm. A glance at the tables shows how changeable the distribution of the temperature is, both in febrile and in non-febrile conditions, while the constant difference, which Hankel found, is not recognisable in them. Sometimes the difference in heat between the axilla and the superficial layers of the cutis is less in pyrexia than in apyrexia, sometimes greater; and the variations at different points of the surface in the same individual occur quite irregularly. Further, while the temperature is stationary in the axilla, the surface-heat oscillates considerably, but it has an almost constantly higher position during the course of fever than during convalescence. The observation on tertian ague shows, in opposition to Hankel's experience, that, during and immediately after the rigor, the difference between the internal and peripheral temperatures was by no means less than during the previous apyrexia. Jacobson concludes with the remark that his observations are in favour of the view that, even at the height of fever, the cutaneous vessels alternately contract and dilate, and that hyperæmia and radiation of heat from the surface of the body may vary within wide limits, not only at different times, but also in different parts at the same time. The results are reconcilable neither with the hypothesis of a paralysis, nor with that of a tonic spasm of the muscular coats of the cutaneous vessels.

F. TAYLOR, M.D.

RECENT PAPERS.

- Investigations into certain descriptions of Putrid Decompositions. By Dr. Paschutin. (*Archives de Physiologie*, no. 6.)
 Investigations into the Excitability of the Cerebral Lobes. By Dr. Brown-Séquard. (*Ibid.*)
 On the Anatomy of the Eye. By Dr. L. Loewe. (*Berliner Klinische Wochenschrift*, February 21.)
 The Physiological Cause of Muscular Contraction of the Gravid Uterus. By Dr. T. J. Mays. (*New York Medical Journal*, February.)
 The Clinical Study of the Physiology of the Cerebellum. By Dr. J. von Drozda. (*Wiener Medicinische Wochenschrift*, nos. 4 and 7.)
 The Taste. Organs in the Tongues of Birds. By G. Asper. (*Centralblatt für die Medicinischen Wissenschaften*, February 26.)
 A New Reaction of the Medullary Nerve-fibres. By Dr. Th. Treitel. (*Ibid.*)
 The Nerves of the Skin. By Dr. J. G. Ditlevsen. (*Ibid.* March 4.)

MEDICINE.

MODEL ON THE EXCISION AND COMPOSITION OF A WANDERING GALL-STONE.—Dr. A. Model, of Nördlingen, records the following case in no. 41 of the Munich *Aerztliches Intelligenzblatt* (October 12, 1875). A publican's wife, aged fifty-five, had suffered for about one and a half years from occasional pains in the abdomen, slight and unfrequent at first, afterwards becoming more frequent, and gradually very severe and colicky. For the last six months the pains were strong enough to bend her double; and for a month she had kept her bed entirely. About an inch and a half to the right side and below the navel there was a minute sinus, just admitting a darning-needle, from which a very little thick, pale, yellowish fluid could be squeezed out. This was near the centre of a red and slightly swollen patch in the right hypochondrium, about the size of a small saucer. A fine probe, introduced

with some difficulty, in the outward direction, reached, at a depth of about three-quarters of an inch, a rough, hard body, which sounded, when struck, like bone, or a moderate-sized pebble. Further soundings gave the impression that it was rough, gritty, and not very hard. The patient being timid, it was removed under the colourable pretext of exploring, by dilating the sinus with a scalpel, and seizing the stone—for so it proved—with Bruns's sequester-forceps. In form and bigness it resembled a nutmeg. It was covered with a very dark crust, with a thickness of two to three millimètres (equal one-eighth of an inch nearly), and this, the softest part, was rough, crumbly, and porous. Within this a glittering mass, rich in cholesterin, appeared. The stone was perfectly encysted in the abdominal wall, and the lining or wall of the cyst was extremely smooth. No deeper opening towards the gall-bladder or liver was discoverable. The gall-stone was sawn in two, and showed in its interior a sort of marbling not unlike a nutmeg, only there were more radiating lines. With a lens, numerous glittering particles were easily seen. It had a sort of greasy feel, but no proper nucleus was discoverable. Drs. Rölhe and Frickhinger gave the following analysis for 100 parts: Cholestearine, 46.047; margarin, 1.161; alcoholic extractives (?), cholic and choldidic acid, and dyslysin (?), 3.194; bile-pigment and mucus, 21.297; inspissated bile, 2.904; carbonate of calcium, 16.650; phosphoric acid and magnesia, traces; water, 6.582; loss, 1.165 = 100. The patient made an excellent recovery; she was allowed to get up in ten days, and the sinus healed entirely in five weeks. The only treatment was a compress of charpie, with a bandage, great cleanliness, and occasional applications of nitrate of silver.

TUTSCHEK AND ZAGGL ON PARACENTESIS THORACIS BY MEANS OF THE PNEUMATIC ASPIRATOR.—In nos. 40, 41, and 42 of the Munich *Aerztliches Intelligenzblatt* (October 5, 12, and 19, 1875), Dr. Tutschek, surgeon-major in the royal household, and Dr. Zaggl, of Niederviehbach, communicated the results of their late experience in the treatment of pleuritic effusion and empyema. The cases of the former are partly from hospital, and partly from private practice, and are a continuation of a paper by him in the same journal (no. 2, for 1874). Those of the latter are from private practice, and are given at some length. For convenience of reference, both sets are included in the subjoined table; although in the original only Dr. Tutschek's cases are tabulated.

The remarks appended to these cases show that many of them presented symptoms of great severity. The results are encouraging; the more so, as some appear to have been operated upon in crowded wards. The operation of aspiration is evidently growing into favour in Germany, since one instrument-maker is stated in this article to have sold seventy aspirators very lately. Cases by other operators are mentioned; but the details are not given. [The experience of Drs. Sansom, Cayley, and the reporter at the North-Eastern Children's Hospital has shown that very great relief is sometimes afforded by the withdrawal of only a few drachms of fluid. In fact, as Herr Zaggl puts it, the operation is a first-rate diuretic. The translator regrets that, either from Gallophobia or some other cause, no mention is made of Dr. Dieulafoy; and the operations and instruments are spoken of as if purely German!—*Rep.*]

TABULAR STATEMENT OF TWENTY-SIX CASES OF PARACENTESIS THORACIS BY MEANS OF THE PNEUMATIC ASPIRATOR, IN CASES OF SEROUS EFFUSION INTO THE PLEURAL CAVITY.

Number of case for reference.	Sex.	Age.	Side affected.	Duration in days of effusion before first puncture.	Number of operations.	Quantity of fluid removed in ounces.	Colour, etc., of the fluid.	Percentage of solid constituents in dried condition.	Result.	Period, in days, till cure or death.	Remarks.
1	M.	21	Left	15	4	{ I. 14 II. 49 III. 27 IV. 26 I. 68 II. 1½ III. 5 }	Yellowish	{ I. 10'0 II. 12'8 III. 12'0 IV. 6 I. 10 II. ? III. 4'3 }	Died	117	{ Cheesy masses in lungs. Tubercular ulcers in the bowels.
2	M.	21	Right	32	3	{ I. 14 II. 49 III. 27 IV. 26 I. 68 II. 1½ III. 5 }	Greenish Yellow	{ I. 10 II. ? III. 4'3 }	Died	57	{ Effusion became purulent. Endocarditis.
3	M.	23	Left	32	1	38	Yellowish	12	Cured	28	—
4	M.	23	Right	39	1	37	Pale yellow	6	Cured	21	—
5	M.	22	Right	13	1	38	Greenish	5	Cured	44	Intercurrent gastric disease.
6	M.	22	Left	38	1	35	Sanguineous	3'7	Cured	39	Slow convalescence.
7	M.	21	Right	24	1	80	Yellowish	8'3	Cured	10	—
8	M.	29	Left	18	1	62	Yellowish	7'3	Cured	10	—
9	M.	25	Right	27	1	64	Yellowish green	5'6	Cured	10	—
10	M.	12	Right	39	1	4½	Yellowish	6'9	Cured	19	Dr. Ranke operated.
11	M.	22	Left	25	1	35	Greenish yellow	6'6	Cured	7	—
12	M.	21	Left	31	1	34	Yellowish	6'6	Cured	18	—
13	M.	22	Right	31	1	30	Yellowish	7'7	Cured	11	—
14	M.	32	Right	15	2	{ I. about 33 II. about 30 }	Greenish yellow	?	Died	70	{ The effusion was cured. He had tubercular pleurisy of left side, and milary tubercles in peritoneum.
15	M.	20	Right	7	1	15	Yellowish	12'5	Cured	20	—
16	M.	17	Right	7	3	{ I. 30 II. and III. same quantity of pus. }	I. Yellowish	8'4	Died	106	—
17	M.	64	Right	26	1	33	Yellowish green	6'2	Died	61	—
18	M.	57	Right	38	1	28	Pale yellow	7'9	Cured	28	—
19	M.	53	Right	15	1	49	Yellowish	8'3	Died	22	Became purulent.
20	M.	24	Right	35	1	29	Much blood in it	8'8	Cured	38	Tedious convalescence.
21	M.	27	Right	22	1	82	Greenish yellow	7'3	Cured	8	—
22	F.	32	Left	about 70	1	A wine bottle.	?	?	Relief	—	{ Died 8 months afterwards of phthisis.
23	M.	21	Left	14 ?	1	21	{ Pale and very } albuminous	?	Cured	30	No relapse.
24	F.	48	Right	28	1	50	Very albuminous	?	Cured	28	—
25	M.	21	Left	4 or 5 months	1	{ Only exploratory : a few drops of pus. }	—	?	Died. Seeremarks	90	{ Operation with knife and drainage-tube. Great relief; but marastic symptoms set in, and he died of apoplexy (?).
26	M.	24	Left	6 days	2	{ I. 3 beer glasses of bloody serum. II. A great quantity of pus. }	—	?	Cured	—	{ Complicated with subcutaneous emphysema and pneumothorax.

W. BATHURST WOODMAN.

GUYOT ON CHOREA CURED BY ENEMATA OF CHLORAL.—Messrs. Goeltz and Auger (in *Gazette Hebdomadaire*, December 10, 1875, no. 50) relate the particulars of a very interesting case occurring in the service of Dr. Guyot, at the Lariboisière Hospital, Paris. The patient, a young woman aged twenty-two, was taken suddenly, on November 1, 1874, with general trembling, predominating on the left side, palpitation of the heart, constant pronation and supination of the left forearm, as many as sixty times in a minute, throwing forward of the leg, spasmodic contractions of the face, and other well-marked symptoms of chorea. She had already been submitted to various kinds of treatment—bromide of potassium for a fortnight, without any amelioration; tartar emetic, sulphur baths, quinine wine, bromide of camphor, opium, chloral (thirty grains twice daily), arseniate of soda, syrup of strychnia, ether-spray to the spine every second day, injections of eserine (which produced some slight amelioration), cold douche, dry cupping to the nape of the neck, valerianate of atropine, tartrate of iron, baths prolonged for two hours daily—but all without more than tem-

porary or very slight amelioration of the symptoms. The catamenia, which commenced at the age of fifteen years, had been regular; and once during the flow the movements ceased, but returned again immediately afterwards. She was sent to the country to recruit her health, and treatment discontinued for a time.

On May 18 treatment was recommenced. Hypodermic injections of chloral and morphia were given night and morning, as well as thirty grain doses of chloral twice daily. The morphia was gradually increased to eight centigrammes. Some improvement took place, the patient sleeping quietly by day as well as night without sickness or contraction of the pupils ensuing; but on waking, the movements reappeared.

At the end of a fortnight the movements had notably diminished; but a new symptom now appeared, viz., convulsive movements of the muscles of the larynx and the diaphragm, causing hiccough some fifteen times in a minute. These continued until July 9, when they ceased suddenly.

Choreic symptoms returned on the 22nd, in conse-

quence of emotion from the death of one of her parents. The morphia was gradually increased to sixteen centigrammes, injected thrice daily. Syrup of chloral, thirty-eight grains twice daily, was also given, but omitted as it destroyed her appetite. The morphia was increased to twenty centigrammes up to the 30th, when it was given up. On the 31st, the patient being more and more agitated, an enema of forty-five grains of chloral was administered.

August 1.—Two enemata of chloral were given; the appetite and digestion were excellent. Chloral in drachm doses, twice daily, was injected *per rectum*, and continued until the 15th, when the movements had completely disappeared, and the patient could write and sew. On the 28th the cure appeared complete, and on December 1 still remained so.

ARTHUR W. EDIS, M.D.

GIBNEY ON OSSIFICATION OF THE DORSAL MUSCLES.—At the meeting of the New York Pathological Society on October 13, Dr. E. P. Gibney (*Medical and Surgical Reporter*, November 20) brought before the society a girl, aged ten, who was the subject of ossification of the latissimus dorsi, scaleni, and erector spinæ muscles. Some months previously she had suffered from diphtheria, which left paresis of the vocal cords for some time afterward. In the early part of last spring she noticed a difficulty in bending her body forward. She was brought to see Dr. Gibney, by her mother, on September 14, for right scoliosis.

Dr. Janeway said that the case was a rare one, and the first he had ever seen; the disease was progressive in character.

Dr. Knapp stated that he had seen a case of the kind in Heidelberg, in a woman aged thirty, where most of the muscles were involved, and that the disease was still progressing.

Dr. Janeway thought that it would be advisable to divide the tendon of the latissimus dorsi, in order to free the arm. Dr. Heitzmann suggested the internal use of small doses of lactic acid.

RECENT PAPERS.

Chronological and Geographical History of the Plague in the Caucasus, Armenia, and Anatolia in the first half of the Nineteenth Century. By Dr. Tholozan. (*Gazette Médicale de Paris*, nos. 32, 34, 36, 37, and 39, for 1875, and no. 5, 1876.)
Note on a Case of Hysterical Dumbness followed by Cure. By Drs. Lionville and Debove. (*Le Progrès Médical*, February 26, 1876.)

Chronic Glands of an Abnormal Form. By Dr. Potain. (*L'Union Médicale*, February 19.)

Case of Hydrophobia with Convulsive Fits. By Dr. C. Very. (*Revue Médicale de l'Est*, February 15.)

Note on Epileptiform or Convulsive and Apoplectiform Attacks with a high Temperature, in certain cases of general Paralysis. By M. Magnan. (*Gazette Médicale de Paris*, February 19.)

Note on the Affections of the joints in Locomotor Ataxy. By M. Raymond. (*Ibid.*)

On the Lesions and Vascular Sounds at the Level of the Second Left Intercostal Space. By Dr. Duroziez. (*Ibid.*)

On Dyspepsias and their Treatment. By M. A. Bordier. (*Journal de Thérapeutique*, February 26.)

A Novel Case of Aphasia or Loss of Speech, proceeding from the Loss of the Co-ordinate Motions necessary for the act of the Pronunciation of Words; without any Lesion of the Intellectual Faculties. (*Gazette des Hôpitaux*, February 17.)

On Hæmophilia. By Dr. Cadet de Gassicourt. (*La France Médicale*, February 23.)

A Case of Echinococcus Hepatis. By Dr. M. Seligsohn. (*Berliner Klinische Wochenschrift*, February 28 and March 6.)

Two Cases of Leukæmia. By Dr. H. Kuessner. (*Ibid.* February 28.)

On Chronic Diseases and the Diseases of Old Persons. By Dr. De-Giovanni. (*Gazzetta Medica Italiana-Lombardia*, February 19.)

Observations on Revaccination. By Dr. W. B. Davis. (*Cincinnati Lancet and Observer*, February.)

On Saccharine Diabetes, and on Epidemic Cerebro-Spinal Meningitis. By Dr. A. De-Giovanni. (*Annali Universali di Medicina e Chirurgia*, February.)

A Case of Abscess of the Spleen: Recovery. By Dr. P. Barbieri. (*Gazzetta Medica Italiana-Lombardia*, March 4.)

An Epidemic of Typhoid Fever through Poisoning of the Air from Kitchen-Drainage. By Dr. Josephson. (*Deutsche Medicinische Wochenschrift*, March 4.)

On Diphtheria. By Dr. J. S. Cohen. (*New York Medical Record*, February 12.)

SURGERY.

DENNIS ON THE TREATMENT OF AMPUTATIONS BY THE OPEN METHOD.—In a paper in the *New York Medical Journal* for January, Dr. F. S. Dennis, of the Bellevue Hospital, says that for over a year nearly all the amputations in Bellevue Hospital, in the third surgical division, have been treated by the open method, and the results have been surprisingly successful for hospital practice. This method of dressing amputations was inaugurated in Bellevue Hospital by Dr. James R. Wood, visiting surgeon. In fourteen consecutive major amputations, performed during Dr. Wood's service within the past year, there has not been a death, although his patients have all occupied the same wards that were vacated a year ago on account of puerperal fever. In addition to these amputations, there have been in these same wards other capital operations, including resections of the knee and elbow joints, and several amputations of the female breast, all of which have done equally as well as the limb-amputations.

In one case of subperiosteal resection of the elbow-joint, treated openly from the beginning, and in which there was no sloughing, erysipelas, or pyæmia, the temperature only on three occasions rose above 100 $\frac{3}{4}$ ° Fahr. In another resection of the knee-joint, only once did the temperature rise to 103° Fahr. In three amputations of the female breast, treated in these same wards, the temperature in each case was below 102° Fahr.

The cardinal principle involved in this method of dressing is that of preventing suppurative fever; and it is held that this object is best attained by leaving the stump entirely open, thus allowing free and continual drainage. After a limb has been amputated, the flaps are left entirely open. A pillow of oakum is placed under the stump, which is allowed to rest upon this support until the wound is nearly healed. A small piece of gauze is placed over the contour of the stump, and a cradle is placed over the limb, so that the clothes may not come into contact with it. No sutures are used except in the lateral skin-flap method. No adhesive plaster is employed, no oiled skin is placed over the stump, no bandage is applied, no dry charpie is stuffed into the wound, no fenestrated compresses are placed between the flaps; in other words, the stump is left entirely alone. The wound is allowed to drain freely, and the stump is gently washed at frequent intervals by means of an Esmarch's wound-douche. The water in this irrigator is impregnated with crystals of carbolic acid; and, after this ablution, balsam of Peru (which makes a fine stimulating application) is poured over

the granulating surface. The discharge which falls from the wound is removed every few hours in order to secure perfect cleanliness; and it is worthy of observation that this discharge will not decompose when exposed to the open air, but that it requires a warm temperature, such as exists in the stump itself, in order to develop putrefaction. The pus, thus coming away from a nidus of putrefaction which would otherwise be formed, falls upon a piece of sheet-lint, where the temperature is cooler, and thus does no harm. The stump is washed at frequent intervals until suppuration has nearly subsided in the wound, and then the flaps are gradually approximated by means of strips of adhesive plaster. Too much importance cannot be attached to the method of operating by the lateral skin-flaps. It affords the best facility for free drainage, and makes the most serviceable stump. It is important to dissect the flaps very long when they are subjected to the open treatment, as shrinkage often follows exposure to atmospheric influences. This lateral-flap method of amputating Dr. Wood has employed for many years with uniform success. Esmarch's elastic bandage has been employed in every case, and in no instance has sloughing, or any other complication, occurred. The stump after a week is capable of being moulded into any shape. During the entire healing of the wound, the greatest possible care is exercised in reference to the use of the instruments necessary to perform the dressing of the stump. No sponges are used in the wards. Each patient has his own bottle of balsam of Peru, and every instrument used in the dressing of one stump is thoroughly washed in carbolic-acid water before it is employed in the dressing of another. So far as has been practicable, a different set of scissors, dressing-forceps, and other instruments employed in the manipulation of a dressing, has been used, so that each patient had his own instruments, and in this way absolute cleanliness is secured. Each dresser invariably washes his hands in carbolic-acid-water after dressing one case before undertaking another, and any one who is dressing unhealthy wounds in the pavilion, or making necropsies, is not allowed to even assist in the daily dressing of healthy wounds. The advantages that are alleged to be possessed by this method of treatment of stumps are the following.

1. Suppurative fever is very much modified; indeed, it is almost obviated.
2. This method prevents all possibility of the formation of abscesses in the vicinity of the stump, which are apt to form in closed stumps even when they are most carefully watched.
3. Another great advantage is the absence of erysipelas in the wound, or in the cellular tissue in the vicinity of the stump.

MACEWEN ON WOUNDS IN RELATION TO THE INSTRUMENTS WHICH PRODUCE THEM.—In the *Glasgow Medical Journal* for January Dr. William MacEwen contributes a paper on the characters of wounds made with various blunt and sharp instruments. His remarks are founded on the observation, mostly at the Glasgow Central Police Station, of seventy-one cases, presenting one hundred and four wounds. He sums up his paper in the following conclusions.

1. Blunt instruments sometimes produce scalp-wounds having straight outlines and sharp clean

edges, which in these respects could not be distinguished from wounds produced by sharp-cutting instruments. 2. Scalp-wounds, which exhibit entire hair-bulbs projecting from the surface of their sections, have been produced by a blunt instrument. 3. Wounds exhibiting nerve-filaments or minute blood-vessels bridging the interspace between the lips of the wound, toward the middle of the depth of the section, while the tissues have receded all round them, below as well as above, have been produced by blunt non-penetrating instruments. 4. When a wound, even with sharp well-defined margins, bears in contour a resemblance to an osseous ridge in close proximity, there is a *probability* that it was produced by a blunt instrument through forcible impact against the underlying osseous ridge. 5. Cut hairs found in the immediate vicinity of a wound are valuable aids in determining whether a sharp or a blunt instrument has been made use of. 6. As to the diagnosis between wounds produced by instruments of the knife kind and other sharp-edged substances, such as glass, earthenware, etc., no dependence can be placed on the mere regularity of outline or sharpness of edge, or the reverse. 7. Sharp clearly defined wounds in certain cases present peculiarities in their terminations which may be sufficient to enable a probable diagnosis as to whether they were produced by a knife or a portion of glass or earthenware. 8. The same instrument, used by the same person in delivering several successive blows, may produce wounds of different character.

BIGELOW ON THE TREATMENT OF ERECTILE TUMOURS BY CENTRAL CAUTERISATION WITH NITRATE OF SILVER.—In the *Boston Medical and Surgical Journal* for January 6, Dr. Henry J. Bigelow describes two cases in which erectile tumours of a formidable nature were easily obliterated by the injection, with a subcutaneous syringe, of a few drops of a solution (equal parts by weight) of nitrate of silver in water. If the tissues be firmly compressed about the orifice of the tube, after its introduction, an eschar of the solid tissues is produced, soon enveloped by coagulum adherent from inflammation, with general blood-stasis in the neighbourhood. While the eschar thus made is more distinct and firm than that of acid or of the perchloride of iron, the expression of the blood probably diminishes the danger of embolism. The ultimate result is abscess and solid cicatrization. The first of the cases was one of a large and pendulous under lip, which was so solidified by a number of simultaneous injections that a V-shaped portion was finally removed from it. The second was one of cirroid aneurism in the cavity of the orbit, which could not have been treated effectually by ligature without sacrificing the eye.

SAYRE ON THE SO-CALLED DOUBLE CONGENITAL DISLOCATION OF THE HIP-JOINT.—In a clinical lecture on this subject reported in the *Philadelphia Medical Times* for January 8, Dr. Lewis A. Sayre says that the nomenclature 'double congenital dislocation of the hip-joint' is entirely erroneous. In the first place, to have a bone *dislocated* it must first be *located*, and unless the bone has been located, he contends there can be no dislocation; there may be distortion and deformity, but a dislocation, double congenital, of both hip-joints has never yet occurred. One might as well speak of the *roof* of a child's mouth that has a cleft palate. The true pathology of this disease is, that there has been an arrest of

development in the bones which contribute to form the acetabulum; that, owing to this non-development, there is a fissured acetabulum; and it is through this fissure that the head of the femur glides upward on the dorsum of the ilium.

CROSBY ON THE FIRST RECORDED OPERATION FOR REMOVAL OF THE ENTIRE ARM WITH THE SCAPULA AND THREE-FOURTHS OF THE CLAVICLE. In the *New York Medical Record* for November 13, Dr. A. M. Crosby gives an interesting account of an operation performed by his father, the late Dr. D. Crosby, in which the whole upper limb was removed for a large osteo-sarcomatous tumour, involving the humerus, scapula, and clavicle. The record is made up partly from some hasty notes made by the operator himself, and from data furnished to Dr. A. M. Crosby by several persons, medical and un-medical, who were present at the operation. The following is an abridgment of Dr. Crosby's paper.

Jonathan G. Cummings, the subject of the report, was born in Plymouth, Grafton County, New Hampshire, August 7, 1800, and died July 6, 1838. He was by occupation a farmer, and at times followed the business of a stage-driver. During the first thirty years of his life he was unusually healthy. There was a family history of cancer.

Some time in 1833 or 1834 the patient drove his coach into Plymouth late at night; and, having previously wrenched his shoulder, fell asleep, with his arm hanging over the back of a chair. On awaking at daybreak, he found his arm numb and almost powerless; nor did it ever return to a perfectly natural condition. On the contrary, he suffered pain in the right shoulder, which persisted for two years, gradually attaining great severity, until it became constant.

About this time a hard tumour made its appearance on the anterior aspect of the shoulder, over the articulation. The tumour steadily increased, until it attained the size of a water-pail. It was so large that a slight inclination of the head brought the patient's cheek into contact with the tumour. The tumour was diagnosed as osteo-sarcoma. Operation was, however, regarded as too formidable to be undertaken, and was therefore declined, by Dr. R. D. Mussey, Dr. Amos Twitchell, and Dr. John C. Warren.

In January 1836 several openings formed, from which a thin, sero-sanguinolent fluid escaped. After this the pain diminished, but the discharge rapidly increased. A cavity formed, which was estimated to be about as large as a two-quart basin. There were twelve openings on the antero-superior aspect of the shoulder communicating with this cavity. Through these there was a copious discharge resembling colloid, but mingled more or less with pus, blood, and degenerated osseous tissue. The openings finally coalesced, forming one large one, about five inches in diameter. The discharge now ranged from a pint to a quart in the twenty-four hours. The opening being at the upper part of the cavity, the *débris* could only be removed by raising the body of the patient erect, and then bending the trunk far forward until the contents were evacuated. On one occasion the whole osseous framework gave way, leaving the arm hanging by the integument, muscles, etc.

The patient lost appetite and flesh, until he was reduced to the last degree of emaciation. Dr. D. Crosby was requested to see the patient. He ad-

vised him to have a radical operation attempted, to which the patient gladly submitted.

The operation was commenced with the expectation that the neck of the scapula and arm only need be removed; but on opening the joint freely, it was obvious that the entire scapula must be removed. After a moment's conference Dr. Crosby proceeded to remove the scapula, and the outer three-fourths of the clavicle. The flaps were antero-posterior. The operation and dressing of the wound consumed thirty minutes. At the end of the first fifteen minutes the patient lost consciousness, and became pulseless, with cold extremities, etc. He did not become fully conscious for twenty hours. He was delirious most of the night. Stimulants were freely used—twelve to sixteen ounces of whisky being given him during the night. The next day he appeared much better, and from this time gained strength rapidly. He began to sit up within two weeks, and got out of doors in seven or eight weeks after the operation.

In June following the operation, Cummings was to all appearance a healthy man. The cicatrix was fifteen inches in length, and seemed entirely free from induration. During July, however, the disease recurred in the cicatrix, and the tumour soon attained the size of a large teacup. This was removed by Dr. D. Crosby some time in August, and the wound cicatrised.

In the winter another tumour, not quite as large, developed in the cicatrix, and was removed early in 1837. No more tumours appeared, and in the following summer he was able to carry on his farm, working most of the time. He remained fleshy and in perfect health for a year. In April 1838 he was seized with an attack of paraplegia, from which he suffered until July 6, when he died, having survived nearly two years and four months. No necropsy was obtained; but Dr. D. Crosby always entertained the opinion that the paraplegia was due to a malignant deposit about the lumbar spine.

Dr. A. M. Crosby briefly enumerates the operations involving the removal of the arm, scapula, and more or less of the clavicle, in their chronological order.

R. D. Mussey reported in the *American Journal of Medical Sciences*, 1837, an operation involving the removal of the scapula and clavicle for malignant disease. Nineteen years before, he amputated at the metacarpus, and six years previously to the last operation, at the shoulder-joint. The patient was aged forty at the last operation, and thirty years afterwards he was living and in good health.

Amos Twitchell removed the entire arm, scapula, and part of the clavicle for malignant disease, but never reported it. His nephew, Dr. Geo. B. Twitchell, informs Dr. Crosby that the operation was performed in the winter or early spring of 1838. It was perfectly successful, but the patient died six months afterwards of the malignant disease.

Dr. G. McClellan removed from a boy of seventeen the scapula, arm, and part of the clavicle, with a fatal result. (*Principles and Practice of Surgery*, Philadelphia, 1848, p. 412.)

Gaetani Bey (*Memoirs of the French Academy of Medicine*) describes a disarticulation of the shoulder, with extraction of the scapula, and resection of the clavicle, in the case of a lad aged fourteen, who recovered.

In 1842 Professor Rigaud removed the scapula

and the outer end of clavicle eight months after amputation at the shoulder-joint. The disease was osteo-sarcoma, and the patient remained well three years after the last operation. (*Strasburg Medical Gazette* for 1844.)

In 1860 Niepce removed the left arm, scapula, and clavicle from a man thirty years of age, injured by machinery. The patient recovered. (*Bulletin of the Academy of Medicine*, 1864-5, vol. xxx.)

A. Lucke (*Archives für Klinische Chirurgie*, 1862) relates that Professor B. von Langenbeck, having exarticulated the humerus in the case of a man twenty-three years of age, on the recurrence of the disease extirpated the scapula and an inch and a half of the clavicle. The disease was osteo-sarcoma, and the patient survived eighteen months.

W. Busch removed the scapula and part of the clavicle from a young girl whose arm was previously amputated for cancer, and the patient recovered. (*Lehrbuch der Topographischen Chirurgie*, 1864.)

In 1863 Syme removed from Mr. K., aged forty, the arm, scapula, and portion of the clavicle. (*Excision of the Scapula*, Edinburgh, 1864.)

In 1864 G. Buck removed the scapula and part of the clavicle, the arm having been removed by a previous operation. The patient recovered from the operation, but died from a recurrence of cancer some months afterwards. (*New York Medical Journal*, 1869.)

J. S. Bird, in the *Lancet*, 1868, reports the case of Ellen L., injured by a fall, in whom two operations were performed in 1863-4. The head of the humerus, the entire scapula, and part of the clavicle were removed.

In 1867 Sir W. Fergusson removed from a man forty years of age, the arm, scapula, and part of the clavicle. A tumour, resulting from an injury, rendered the operation necessary, and the patient died on the third day. (*Medical Times and Gazette*, 1867; *Lancet*, 1867.)

Dr. P. H. Watson reports in the *Edinburgh Medical Journal* for 1869, 'an amputation of the scapula, along with two-thirds of the clavicle, and the remains of the arm.'

These are all the cases involving the removal of the arm, scapula, and more or less of the clavicle, that Dr. Crosby has been able to derive from the very extended researches of Drs. Rogers and Otis, which, he is inclined to think, have been nearly if not quite exhaustive.

BROWN ON FEMORAL ANEURISM, CURED BY DIRECT COMPRESSION, WHILE THE PATIENT WAS TAKING ACTIVE EXERCISE : DEATH FROM PERITONITIS SIX YEARS AFTERWARDS.—Dr. Buckminster Brown (*Boston Medical and Surgical Journal*, October 21, 1875), relates a very interesting case, which is well worth noting as a fresh example of the tolerance of pressure in some persons, though the treatment is not one which it would be desirable, or indeed possible, to imitate frequently.

The patient was a gentleman, aged thirty-eight, in good general health, in whom, without known cause, an aneurism of the femoral artery formed in the right groin, close to the commencement of the vessel. When first seen (in July 1863) the tumour was about three and a half inches in diameter, and was on the increase. Treatment by direct pressure was undertaken, the patient being confined to the bed and sofa, and ordered to keep a bag of shot, 10 lbs. in weight, applied over the tumour; and after a few

weeks a cannon-ball, at first of 12 lbs., and afterwards of 24 lbs., enclosed in a bag, and secured so as not to slip, was bandaged over the aneurism. Direct pressure was kept up in this way for several weeks more, the shot-bag and the two cannon-balls being interchanged during the whole of the day, the patient being at first relieved from the pressure during the night. A small pulsating swelling made its appearance in the course of the dorsal artery of the foot, but soon subsided under the pressure of an elastic apparatus. The whole limb was also enveloped in an elastic stocking; and after about three months of this treatment the shot-bag was applied during the night, also with a strong belt over it. This went on for at least a year and a half, and then he was allowed to walk about and attend to business, the tumour still pulsating, though feebly, and having become much harder, and the artery below the tumour being imperceptible to the touch. An apparatus of pad and bandage was securely applied to the parts, so as to produce 'a strong pressure on the tumour even during active exercise.' He began to attend to his business about two years after the first commencement of the treatment, in September, 1865. It was not till nearly four years afterwards, i.e. in May, 1869, or nearly six years after the first application of pressure, that the pulsation was found to have finally disappeared. Pressure was then gradually diminished, but not finally disused till April 1870. He lived till February 1875, when he was carried off by an accidental attack of acute peritonitis, the disease having no connection with the parts concerned in the aneurism. These were preserved, and the paper is accompanied by a drawing of the cured and consolidated aneurism, and of the main branches which carried on the collateral circulation. The aneurism was fusiform, commencing directly under Poupart's ligament, and extending through the whole length of the common, and about an inch of the superficial femoral. The external iliac was impervious for some distance above the aneurism. The profunda femoris seems to have been pervious, but no communication between it and the old aneurism could be found. The internal iliac and its branches were much enlarged, in order to carry on the circulation. The femoral vein was obliterated.

[The most interesting feature in this case is the great length of time during which the patient was able to tolerate direct pressure. Dr. Brown refers this to his exceptional power of enduring pain, for the pain connected with the treatment seems to have been severe and long-continued. The present reporter has not met with any other case in which so long-continued and so severe pressure has been borne, though the case of Verdier comes rather near it in this respect, in which a man who had had the thigh amputated for gangrene, caused by popliteal aneurism, and who had another aneurism in the stump, kept the latter in check for the four years, which he survived by pressure on the artery in the groin (*Lancet*, Sept. 5, 1874, p. 336). In that case, however, the disease, though checked, was not cured, and the pressure was made, not over an aneurismal sac, but on a healthy artery. But the two cases are so far parallel, as showing for how long a period a determined and not over-sensitive patient can bear compression. The reason why in the case before us Dr. Brown shrank from ligature or rapid compression of the external iliac artery, was the apprehension that there was extensive atheroma of the

arteries, an apprehension verified by the *post mortem* examination.

Another point of subordinate importance, but which is still interesting, is the large size of the anastomosis, by means of the comes nervi ischiadici, in connection with severe pain in that nerve, of which the patient had complained during life. A similar enlargement, though to not so great an extent, was found also in a branch running along the anterior crural nerve, and pain had been complained of in the course of this nerve also. The development of these collaterals was, in Dr. Brown's opinion, the cause of the pain.

The enlargement of the comes nervi ischiadici has been pointed out and figured by Porta and others (see Gray's 'Anatomy,' 7th edit., pp. 411, 412); but it is still doubtful whether this is really accompanied by any pain. In the present instance, the pressure and constrained position seem sufficient to account for pain in either or both of the large nerves of the limb.—*Rep.*] T. HOLMES.

RECENT PAPERS

- Refraction in Cases of Deformity from badly adjusted Fracture. By Mr. Spence. (*Edinburgh Medical Journal*, March.)
- A Variety of Infantile Hernia, Strangulated, with Operation. By Dr. J. D. Trask. (*New York Medical Record*, Feb. 26.)
- On the Entrance of Air into the Veins. By M. Louis Couty. (*Gazette Médicale de Paris*, February 15, 1876.)
- On the Use of Prepared Wadding instead of Sponges and Lint. By M. Bouisson. (*Journal de Thérapeutique*, February, 10.)
- On the Utility of the *Sonde à demeure*, in certain Kinds of Stricture of the Urethra. By M. Dubuc. (*Gazette des Hôpitaux*, February 12.)
- Tumours of the Breast. By Dr. Cartaz. (*Le Progrès Médical*, Feb. 12.)
- Multiple Molluscoid Fibromata. By M. H. Lourestie. (*L'Union Médical*, Feb. 10.)
- On Melanotic Cancer. By M. Verneuil. (*Le Mouvement Médical*, Feb. 5.)
- On the Home Surgical Treatment of Poor Children. (*Le Bordeaux Médical*, Feb. 15.)
- On the application of Linear Rectotomy to very extensive Strictures of the Rectum. By M. Fochier. (*Lyon Médical*, February 20, 1876.)
- Melanosis. Melanotic Tumours and their Diffusion : Diagnosis : Prognosis. By M. Duplay. (*La France Médicale*, February 19, 1876.)
- On Asphyxia during Thoracentesis. By Dr. Tenneson. (*L'Union Médicale*, February 22.)
- On a Special Mode of Treatment of inveterate Prolapsus of the Rectum in the Adult. By M. Delens. (*Journal de Thérapeutique*, February 25.)
- Note on two Cases of Perineorrhagia. By M. Daniel Mollière. (*Lyon Médical*, February 27.)
- On some Serious Complications which may result during or after important Operations on the Pleura (Thoracentesis, Thoracotomy, Injections, and Washing of the Inflamed Pleura. (*Gazette Médicale de Paris*, March 4.)
- Median Lithotomy. By Dr. J. H. Pooley. (*Cincinnati Lancet and Observer*, February.)
- Recto-Urethral Fistulae. By Dr. E. J. Bermingham. (*New York Medical Journal*, February, 1876.)
- Penetrating Pistol-Ball Wounds of the Chest : their Relative Fatality. By T. T. Bland. (*Ibid.*)
- On Dislocation of the Ulna Backwards. By Dr. G. Fiorani. (*Gazzetta Medica Italiana-Lombardia*, February 5.)
- Pelvic Abscess from Dislocated Kidney : Puncture per Rectum : Death. By Dr. A. Wölfler. (*Wiener Medicinische Wochenschrift*, February 12 and 19.)
- On Thyrotomy. By Dr. Czerny. (*Ibid.* February 26.)
- On the Treatment of Laryngeal Growths. By Dr. Jelenffy. (*Ibid.*, February 26 and March 4.)
- The Treatment of Præpatellar Hygroma by Incision. By R. Volkmann. (*Berliner Klinische Wochenschrift*, Feb. 21.)
- Osteo-Aneurism of the Inferior Maxilla. By Dr. E. Peugnet. (*New York Medical Record*, February 5.)

A Case of Uranoplasty during deep Narcosis, with the Head Dependent. By Dr. A. Menzel. (*Gazzetta Medica Italiana-Lombardia*, February 26.)

Clinical Lecture on Contused and Lacerated Wounds. By Dr. A. B. Crosby. (*New York Medical Journal*, February.)

On Posterior Catheterism. By Dr. H. Ranke. (*Deutsche Medicinische Wochenschrift*, February 12.)

Excision of the Os Calcis. By Dr. A. Iversen. (*Hospitals-Tidende*, January 26, February 2, 9, 16, 23.)

MATERIA MEDICA AND THERAPEUTICS.

JACKSON ON SOME MEDICINAL PLANTS OF THE COMPOSITÆ.—The *Pharmaceutical Journal* for December 11, 1875, contains an article by Mr. John R. Jackson, on some medicinal plants belonging to the natural order Compositæ. He says that no natural order has such distinct botanical characters as have the Compositæ, and no other order, perhaps with the exception of Leguminosæ, has so wide a distribution over the surface of the globe. The properties of the order also vary considerably ; for while some species abound in a bitter aromatic principle, others are tonic and stimulant, while others again abound in a milky poisonous juice. Amongst official Compositæ included in the Pharmacopœias either of Britain or India are the chamomile (*Anthemis nobilis*), santonica (*Artemisia*, sp., probably a variety of *A. maritima*), elecampane (*Inula Helenium*), arnica (*Arnica montana*), dandelion (*Taraxacum officinale*), pellitory of Spain (*Anacyclus Pyrethrum*) and prickly lettuce (*Lactuca virosa*). Amongst other plants having medicinal properties, and which are occasionally used or have been recommended, may be mentioned the *Artemisia indica*, a plant with a strong aromatic smell and a bitter taste, occurring frequently on the mountains of India. An infusion of the leaves and tops of the plants are said to form a mild but efficient stomachic tonic and it has been administered successfully in nervous and spasmodic affections arising from debility. The common wormwood (*Artemisia Absinthium*) is too well known as the source of absinthe, to need more than a mere mention of its use for the preparation of that beverage. At one time it was very highly esteemed as a tonic, febrifuge and anthelmintic. It is said to impart a bitter taste to the flesh of sheep which feed upon it ; many of the species possess similar properties to the above, and are used in a like manner. The southernwood (*Artemisia Abrotanum*) for instance, at one time common in English gardens, and originally a native of the south of Europe, was formerly used as a tonic and vermifuge ; it was also considered to be obnoxious to insects and was often placed with clothes to keep away moths, the old French name of *Garde-robe* having arisen from this fact. The mugwort (*Artemisia vulgaris*), a well-known weed growing in hedgebanks in this country and distributed over Europe, North Africa, Siberia, Western Asia, to the Himalayas, was at one time strongly recommended as an emmenagogue. The dried leaves bruised, rubbed between the hands and formed into small cones, were considered a good substitute for Chinese moxa, which was prepared from *Artemisia moxa*. Under the name of wormseed, the herbalists sell the flower-stalks and heads of several species of *Artemisia*.

In the genus *Vernonia*, one of the largest of the Composite order, *V. anthelmintica*, common in

waste places throughout India, furnishes from its seeds by pressure a green-coloured oil or fat. These seeds are seen in most of the Indian bazaars; they are of a brown colour and have a bitter nauseous taste; amongst the natives they are highly valued as an anthelmintic, being bruised and administered in honey in doses of about a drachm and half, divided equally, and taken at an interval of a few hours, followed by an aperient. Their effect is said to be to expel the worms in a lifeless state. 'In Travancore, the bruised seeds ground up in a paste with lime juice are largely employed as a means of destroying pediculi.' They were regarded by Dr. Gibson as a valuable tonic and stomachic, and besides this they are also said to possess diuretic properties. From the evidence in favour of their use as an anthelmintic, they would seem to warrant further and more careful trials.

Another Indian plant, *Notonia gradiflora*, has been advocated as a remedy for hydrophobia. The manner of preparation and administration, as given in the Indian Pharmacopœia is as follows. 'About four ounces of the freshly gathered stems, infused in a pint of water for a night, yield in the morning, when subjected to pressure, a quantity of viscid greenish juice, which, being mixed with the water, is taken as a draught. In the evening a further quantity of the juice, made up into boluses with flour, is taken. These medicines are directed to be repeated for three successive days.'

The flowers of *Chrysanthemum Roxburghii*, also an Indian plant, have been used as a substitute for camomiles in India. The root when chewed imparts a sharp tingling sensation to the tongue, and it has been suggested that it might be used as a substitute for pellitory.

The genus *Eupatorium*, though at the present time furnishing no plants of really acknowledged medicinal value, was formerly considered of some importance, the common hemp-agrimony (*Eupatorium cannabinum*) being used for coughs, intermittent fevers, dropsy, etc. Externally it was applied in the form of a cataplasm to tumours, ulcers, etc., and the expressed juice mixed with vinegar was a favourite application in some forms of cutaneous diseases. For internal application it was recommended to boil a handful of the leaves and young tops in a quart of water or whey, which should be taken in frequent doses; or the expressed juice was also recommended in doses of from two to three ounces. The dried leaves were used in the form of tea, and the root boiled in water in the proportion of an ounce of the former to half a pint of the latter was administered in dropsies. It is described by Boerhaave as being in very great use amongst the turf-diggers of Holland, who used it in jaundice, scurvy, foul ulcers, and those swellings of the feet to which they are liable.

A South American species, *Eupatorium Ayapana*, is very aromatic and has a slightly bitter and astringent taste. It is generally used as an antidote for snake-bites both for inward and outward application. In Mauritius an infusion is made which is used in dyspepsia and generally in affections of the bowels and lungs. In the cholera epidemics which visited the island in 1854 and 1856 this plant, it is said, 'was extensively used for restoring the warmth of the surface and languid circulation.' The plant has become naturalised in India, Ceylon, and Java. In the former country the bruised leaves have been used successfully in the case of foul ulcers; a decoction is made and used as a fomentation. Though

the plant was formerly very highly extolled for its medicinal virtues, it has now to a great extent fallen into disuse; nevertheless, it is probable that upon further trial it might be found useful as a tonic, stimulant, and diaphoretic.

Several species of *Eupatorium* are used medicinally in North America, foremost amongst these being the thoroughwort, or boneset (*E. perfoliatum*). It is widely diffused, growing principally in damp situations; in the form of a warm infusion it is emetic, sudorific, and diaphoretic; but if taken cold it acts as a tonic and febrifuge. The leaves and flowers reduced to a powder are purgative even in doses of from ten to twenty grains. It is said to have been frequently prescribed with advantage in rheumatism, typhoid pneumonia, catarrhs, dropsy, and influenza. Porcher, in his *Resources of the Southern Fields and Forests*, tells us that the plant is extensively cultivated among the negroes on the plantations in South Carolina, as a tonic and diaphoretic in colds and fevers, and in the typhoid pneumonia so prevalent among them. He says, 'I have found this and the Senega snakeroot (*Polygala senega*) convenient and useful prescriptions; the latter with tartar emetic solution, to promote expectoration; and the former with flax-seed tea as a stimulant diaphoretic; combining them with spirit of turpentine when it has assumed the typhoid form. . . . The infusion of the roots and leaves is usually preferred, of which one to three ounces may be taken several times a day; of the root in powder, the dose is thirty grains. As an emetic and cathartic a strong decoction is used, made by boiling an ounce of the herb in three half-pints of water to one pint, given in doses of one or two gills or more.' Thoroughwort tea is used by many physicians in South Carolina in fevers, and is considered by them as the 'very best of the indigenous antiperiodics as a substitute for quinine.' Other species of North American *Eupatorii* having medicinal properties are the *E. purpureum*, purple thoroughwort, or gravel root; *E. tucrifolium*, wild horehound; *E. feniculaceum*, dog-fennel; and *E. rotundifolium*. The first possesses properties somewhat similar to *E. perfoliatum*; it is a diuretic, and one of the popular remedies for calculus. The second is tonic, diaphoretic, diuretic, and aperient, being commonly used in fevers and colds. The fresh juice of *E. feniculaceum* is said to relieve pain caused by the bites of insects, and it is sometimes strewed on floors to keep away insects. Though it seems doubtful whether the plant really contains any tannin, it attracted a great deal of attention in South Carolina in 1861, in consequence of its reputed power of tanning leather in an incredibly short space of time. The uses of *E. rotundifolium* are similar to those species already described.

At one time it was thought that the leaves of the *E. glutinosum* formed the matico of the Peruvians, but it has been proved since that the *Piper angustifolium* of Ruiz et Pav. (*Aritanthe elongata*, Miq.), is the source from whence true matico is obtained; several other plants, however, produce leaves similar in appearance to those of *Aritanthe*, and these leaves sometimes come to this country as matico.

Two or three species of *Erigeron* are used in North America as tonic and diuretic medicines. Foremost amongst these is the flea-bane (*E. canadense*). It is an annual plant, common in waste places in many parts of England, especially in the neighbourhood of London, having being originally introduced from the

United States, where in many parts it is frequent in sandy soils. It is frequently used in cases of dropsy and diarrhoea as a stimulant, tonic, diuretic, and astringent. The plant is much used by the herb doctors, who administer it in the form of infusion. An infusion of the powdered flowers is considered antispasmodic, and is used in cases of hysteria and affections of the nerves; an oil is also obtained from the plant, which is said to possess remarkable styptic properties. The frost root (*Erigeron philadelphicum*)—also a North American plant, as its specific name implies—has similar properties to the *E. canadense*, and has a great reputation for the cure of calculus and dropsy. Other species of reputed medicinal value in North America are *E. strigosum* and *E. pusillum*.

In the genus *Solidago*, which includes the golden rod of our thickets (*Solidago Virgaurea*), several species have reputed medicinal properties. The British species itself was formerly considered an useful medicine in diarrhoea and dysentery. The golden rod of North America (*S. odora*) is used as an aromatic stimulant and diaphoretic; it is said to lessen nausea, allay pain arising from flatulence, and to cover the taste or correct the operation of irritating or unpleasant medicines. It is said, when applied outwardly, to have the power of relieving pain arising from headache. The flowers, when dried, have been used as a wholesome and not unpleasant substitute for tea. Other species, such as *S. sempervirens* and *S. procera*, have reputed medical properties.

In the genus *Baccharis*, which includes a large number of species found principally in North and South America, many are of medicinal value; thus the Brazilians prepare from the stems of *B. trimera* an infusion which is used as a sudorific and tonic, while from *B. genistelloides* an extract is obtained used in cases of fever. In Parana, portions of the stems of *B. microcephala* are put into warm baths for the relief of rheumatism; and in North America, *B. halimifolia*, under the names of sea-myrtle or consumption-weed, is used as a demulcent in cases of consumption, and for coughs. It is somewhat mucilaginous, and has a bitter taste.

In America, *Ambrosia artemisiifolia*, known as the rag-weed, and *Ambrosia trifida*, the great rag-weed, are both used medicinally; the former as a substitute for quinine, and the second for arresting excessive salivation. *A. maritima*, a plant of Italy and the Levant, has a sweet smell and an aromatic bitter taste, and is said to be useful as a tonic.

The genus *Blumea* is remarkable for furnishing the peculiar camphor called Ngai camphor by the Chinese, well described by the late Mr. Daniel Hanbury in the *Pharmaceutical Journal*, (vol. iv. p. 709, 3rd series). *B. balsamifera*, the plant which furnishes this camphor, is said to be in very general use in Java and China as an expectorant, and in Cochin China as a stomachic, antispasmodic, and emmenagogue. Other Indian species, as *B. lacera* and *B. aurita*, are said to have a strong smell of turpentine, and to be used by the natives in dyspepsia.

Eclipta prostrata, also an Indian plant, common in wet places, is described as being purgative and emetic, these properties residing particularly in the roots. *E. erecta* and *E. procumbens*, both North American species, yield a dark or black dye used for dyeing the hair.

Besides those above enumerated many other plants

belonging to this order are used in various parts of the world for their medicinal properties. We have pointed principally to the plants of America and India, these being countries in which the properties of the plants would most likely be discovered or experimented upon by Europeans. We have far from exhausted the list of either country, nor have we introduced those of acknowledged utility, such as *Taraxacum*, *Lactuca*, and others which grow equally well in India and America as in England; neither have we included British plants, which formerly appeared in herbals, but which are now no longer used.

FAYRER ON THE EFFECTS OF ARNICA AS A LOCAL APPLICATION.—Dr. Fayer writes in the *Practitioner* for January, that, when deer-stalking in September, he sprained his wrist rather severely, by stumbling in a hole. In the evening he applied a weak solution of tincture of arnica, enveloping the lint soaked in the solution with a piece of oiled silk. This was removed after two or three days; the pain of the sprain having abated, and the swelling subsided. The moisture of the application had, meanwhile, caused a few small papules to appear on the skin. These quickly disappeared, and the surface seemed sound. About six days later he came into contact with a nettle, which stung the wrist very slightly. On the same evening violent irritation of the part set in, and the skin of the wrist and forearm, exactly corresponding to the early application of the arnica, became hot, painful, and affected with an intolerable itching and burning sensation. The following day, the skin was much inflamed, and the pain extended up the arm to the axilla, the absorbents being very painful. The skin was red, brawny, and covered with eczematous patches.

Rest, purgatives, and the application of acetate of lead to them gave relief; and the next day the acute symptoms had subsided, but leaving the wrist still swollen, brawny, and painful, with irritating spots of eczema, which gradually dried into scales.

He remarks that this case not only confirms the statement that arnica has the property of producing irritation of the skin, but shows the necessity of caution in applying it and of limiting the time of its application.

PAUL ON PETROLEUM AS A DRESSING FOR ULCERS AND SUPPURATING WOUNDS.—Dr. Comegys Paul (*Philadelphia Medical Times*, Dec. 27) makes some observations upon the use of petroleum as a useful and cheap surgical dressing. It seems to him to combine very especially the two properties of being antiseptic and stimulating. The ordinary commercial petroleum can be applied with little trouble or inconvenience; and, in cases where the surgeon is not prepared with his liniments and cerates, it can be used without subjecting him to delay and waste of time. That petroleum is antiseptic we have most excellent authority.

In a case of extensive destruction of the cellular tissue in the arm of an Irish labourer, about fifty years of age, he used it with great benefit. A young woman convalescent from typhoid fever, through the carelessness and neglect of the nurse, formed a large sacral ulcer with a slowly separating slough and marked diminution of the vitality in the surrounding parts. It was dressed with petroleum alone,—lint saturated with the oil being packed into the entire cavity, and the whole

retained by adhesive strips. It healed in a month, and at no time was there a bad smell or discharge of any account.

Further instances of the successful employment of petroleum might be cited, but only to detail similar results. Dr. Paul believes the petroleum to be most useful as an application to non-specific sluggish ulcers, and to all suppurating wounds that have a tendency to heal with an unhealthy and easily-ruptured cicatrix. He has not tested its utility in recent wounds or after surgical operations.

As an injection in sinuses, either connected or unconnected with diseased bone, the result will be satisfactory. In a bone-sinus it can be used without interruption, materially diminishing the discharge.

It is valuable in all inflammations of an erysipelatous character, being applied like an ordinary fomentation. The spreading of the disease is, apparently, favourably influenced, and the duration shortened in many cases.

Wounds dressed with petroleum should be thoroughly cleansed, then covered with saturated lint, and, where there has been deep-seated destruction of the tissues, charpie fully impregnated with it should be packed into the cavities, and the whole overspread with oiled silk, waxed paper, or a piece of muslin spread with lard.

The smell is not at all oppressive, but is generally concealed by the covering, and does not cling to the fingers after ablution. The very decided objection to carbolic acid, the odour of which remains for hours about the person, is entirely avoided in using petroleum. The very little pain or smarting sensation which sometimes occurs at the moment of application subsides in a few moments.

CLELAND ON THE USE OF SACCHARATED LIME IN TYPHUS FEVER AND OTHER COMPLAINTS.—Dr. Cleland, of Galway, in the *Practitioner* for December, says that it is eighteen years since, in the *Edinburgh Medical Journal*, he called the attention of the profession to the medicinal properties of saccharated lime. He has often been struck with the utter misconception of the properties of this substance, which is prevalent, and prevents its being used so much as it should be. The two points most necessary to insist on in the administration of this remedy are probably large doses and copious dilution. A teaspoonful of the pharmacopœial 'liquor,' given after meals, is necessary, in most cases, to develop its effects as a stomachic, and should be diluted in three or four ounces of water; but in cases in which there is foulness of the tongue from acute causes, much the best plan is to fill a tumbler with water, introduce as much of the solution of lime as can be added without giving a very disagreeable taste, and let the patient drink of the mixture *ad libitum*; and when one tumbler is finished let another be filled. Generally, he believes, in most cases in which there is great foulness of the tongue, this treatment will be found most advantageous. It is not suitable, however, when there is inflammation of the stomach, or great irritability, indicated, for example, by central redness of the tongue, with sharp ragged edges. Attacks of bilious or gouty diarrhœa and British cholera yield with great rapidity to the free use of saccharated lime; and it is found exceedingly grateful by the patient on account of its alleviating the dry uncomfortable feeling in his mouth. It produces usually copious diuresis, a gentle perspiration, and relief from tormina, while

the violence of the action of the bowels is quickly mitigated. There is never, however, the slightest constipation produced, the action of saccharated lime being slightly aperient, and even in some persons markedly so.

In many instances he has had occasion to observe that when an hospital patient had a black, parched, and cracked tongue, like a cinder, with the teeth and lips black with sordes, saccharated lime being administered freely, the tongue was moist the following day, and in a few days the black crust had entirely loosened and disappeared. The cases to which he alludes have all been cases of typhus, no typhoid cases having come into the Galway Fever Hospital during the past year, nor for some time previously. In these circumstances, although he has tried saccharated lime in typhoid fever, he is not prepared to make any statement with reference to its utility in that particular disease; but in any case of black parched tongue, no matter what the disease, he should rely on its effects. It is even beneficial where that symptom exists from urinary causes. In typhus he gives the lime in milk, instead of water. Given in this way it has the advantage of preventing that peculiar sensation in the mouth which is liable to follow the drinking of milk, and make it unsuitable for quenching thirst. Thus the patient is induced to take a certain amount of mild nutriment when he is most prostrate. Within the last year, of sixteen females admitted to hospital, suffering from typhus, and treated by Dr. Cleland, only one died; and that one was an aged woman with her tongue parched and blackened to a cinder, and within a few days or the fever running its course when she was admitted; yet she speedily revived, and when at last she succumbed, after several weeks, it was under the effects of exceedingly extensive bedsores, which had commenced before her admission. In no case does he impute to the saccharated lime effects which might rather be considered due to stimulants.

CLELAND ON THE USE OF LIQUOR BISMUTHI FOR HÆMORRHOIDS AND PROLAPSUS ANI.—In the *Practitioner* for January, Dr. Cleland, of Galway, recommends the use of liquor bismuthi given in enema in cases of hæmorrhoids and prolapsus ani. His attention was first drawn to the remedy by a rather peculiar case of prolapsus of the bowel in a middle-aged woman, in whom, whenever she parted her thighs, the bowel emerged and hung down for about six inches, in folds of such a character as made it evident that at least half a yard of intestine was extruded. All previous treatment had failed. It appeared probable that an irritated and congested condition of the mucous membrane led to a derangement of the action of the muscular walls rather than that in a strong woman, a local relaxation, involving the sphincters and intestinal walls, had produced a prolapsus, which led to congested mucous membrane from exposure. Ointment or powder obviously could not be effectually applied; but, as the liquor bismuthi in stomach-affections has a soothing influence far superior to white bismuth, Dr. Cleland directed the patient to mix a dessert spoonful of liquor bismuthi with half a wine-glassful of starch, and, after getting into bed and returning the bowel to its place, to introduce this enema and retain it. A few weeks afterwards, the woman reported that she was nearly well. Dr. Cleland has since frequently used the same remedy for the ordi-

nary prolapsus in children, with invariable and rapid success.

In severe hæmorrhoids, when the mucous membrane is considerably involved, Dr. Cleland knows no application to compare with injection of liquor bismuthi, which has the advantage of being painless; and, as in the case of prolapsus narrated above, the improvement of the mucous membrane has a wonderful influence on both the veins and integument.

MILLS ON OXALATE OF CERIUM.—Dr. C. K. Mills, in an article on the oxalate of cerium, read before the Philadelphia County Medical Society, and published in the *Philadelphia Medical Times* for January 8, gives the following account of cases in which he has used this remedy.

	No. of Cases.	Permanent Relief.	Improvement.	Failure.
Nausea and vomiting of pregnancy	11	10	1	—
Nausea and vomiting of uterine disorders	3	2	1	—
Nausea and vomiting of hysteria	5	4	1	—
Vomiting associated with neuralgia	2	1	1	—
Vomiting of phthisis	2	—	1	1
Vomiting of typhoid fever	4	4	—	—
Vomiting and diarrhoea of dentition	5	5	—	—
Dyspepsia	15	6	7	2
Diarrhoea	3	1	—	—
Dysentery	1	—	—	1
Gastric ulcer	5	—	3	2
Chronic gastritis	2	—	1	1
Scirrhus cancer of pylorus	1	—	—	1
Enteritis	1	—	—	1

The nausea and vomiting of pregnancy almost always yielded with promptness to a few doses of the oxalate of cerium; and by a continuance of the remedy the symptoms could be kept in check. Two of the cases relieved would come properly under the grave vomiting of pregnancy; the rest were the ordinary simple form of nausea and vomiting. In some cases the benefit afforded was magically prompt. Occasionally relapses occurred; but a recurrence to the drug soon set matters right again.

In the nausea and vomiting and irritable stomach often found associated with amenorrhœa, dysmenorrhœa, prolapse, flexions, and other disorders of the uterus, and with hysteria dependent upon psychical and general physical causes, such as grief, care, anxiety, overwork, and the like, the oxalate of cerium is a very efficient remedy.

In two cases of vomiting, associated with severe facial neuralgia (not migraine), the oxalate was prescribed with success, in one instance relieving the symptom entirely, the neuralgia also disappearing without other treatment; in another the vomiting was checked on several occasions, but galvanism had to be used for the removal of the neuralgia.

He gave the oxalate in two cases of obstinate vomiting occurring during the progress of phthisis; in one of which it effectually stopped the vomiting, but in the other failed. According to Dr. George B. Wood, the obstinate vomiting of phthisis is sometimes the result of chronic gastritis, the signs of which can be found after death; whereas in other similar cases no marks of inflammation can be discovered, the disorder of the stomach being simply functional or reflex. It is probably in the latter class of cases that the remedy proves most useful.

Vomiting and sickness of the stomach are symptoms sometimes present at various stages of typhoid

fever, and in four cases of this kind the oxalate of cerium afforded prompt relief. One of these cases was complicated with pregnancy of seven months' duration, the vomiting being exceedingly obstinate. Another very grave case was entirely relieved of the vomiting, but died a few days later from the effects of a violent purge administered without orders. Three of the cases recovered.

Small doses of the oxalate of cerium, about the one-fourth of a grain, given early and often in cases of vomiting and diarrhoea attendant upon the evolution of teeth in infants, are highly efficacious. Besides the cases given in the table, Dr. A. K. Minich has used the oxalate of cerium with striking success in ten cases of these intestinal disorders of infants and young children. It seems to act well in those cases in which bismuth, pepsin, or opium is sometimes beneficial.

Fifteen cases are classed in the table as dyspepsia, of which six were permanently relieved, seven improved, and two unsuccessfully treated. The cerium salt seemed to act with most efficacy in those cases in which morbid sympathetic influences, so called, played an important part in producing the indigestion, probably where depressed or deranged innervation of the stomach existed. It might, perhaps, be advantageously used with the bitter tonics.

The case of diarrhoea in which the oxalate of cerium proved successful was due to nervous excitement. The two cases palliated were the result of indigestion.

In dysentery, gastric ulcer, chronic gastritis, pyloric cancer, and enteritis, Dr. Mills's experience with the drug under consideration has not been very encouraging; but, as in some cases it palliated severe symptoms, it is, he thinks, worthy of a more extended trial.

The exact mode in which oxalate of cerium produces its effects has not with certainty been determined. Dr. Mills says that it seems to have the power of diminishing the reflex excitability of the alimentary tract. It does not seem to answer so well in cases of inflammation or structural lesion of the digestive canal.

The insolubility of the oxalate of cerium is not absolute proof that its operation is simply mechanical. It may be true as a general law that insoluble bodies are not regularly absorbed; yet, directly or indirectly, they sometimes appear to bring about constitutional impressions. It is quite possible that a preparation which is insoluble out of the body may dissolve in it under the stimulus of active digestion, or a chemical circulation may perhaps take place through the tissues. A portion, at least, of the effects of some remedies seems to be due to their direct operation upon the superficial nerves of the stomach.

The dose of oxalate of cerium for an adult is from one to five grains; for an infant or small child, from one-fourth to one-half a grain. Dr. Mills has given as much as six grains, but has most usually prescribed it in doses of two or three grains. In two instances in which it was ordered in doses of five and of six grains, it appeared to cause slight gastric uneasiness and diarrhoea; but these may have been accidental occurrences. It is most readily administered in the form of powder or of pill. If powders be prescribed, it may be given alone, or rubbed up with sugar of milk, powdered gum arabic, gum tragacanth, or some similar article. By trituration the fineness of the commercial oxalate, and of the chemically pure from acid solution, can be much in-

creased; and he believes that they act more promptly after they have been submitted to this process. It may be made into pills with any of the vegetable extracts, such as extract of gentian, quassia, lupulin, hyoscyamus, etc.; or, if it be desired to give it alone, the pills may be made up with syrup of acacia, glycerin, or concentrated honey. Its insolubility renders its administration as a liquid preparation generally unadvisable, but it may be suspended pretty well in mucilage of acacia and simple syrup.

LOOMIS ON MORPHIA IN ACUTE URÆMIA.—The *Philadelphia Medical and Surgical Reporter* of Jan. 8, says that, in his late work on *Diseases of the Respiratory Organs*, etc., Professor Loomis states that, as the result of his experience, he holds the following opinions. 1. Morphia can be administered hypodermically to some, if not to all, patients with acute uræmia, without endangering life. 2. The almost uniform effect of morphia so administered is, first, to arrest muscular spasms by counteracting the effect of the uræmic poison on the nerve-centres; second, to establish profuse diaphoresis; third, to facilitate the action of cathartics and diuretics, especially the diuretic action of digitalis. Thus morphia administered hypodermically becomes a powerful eliminating agent.

The rules which are to govern its administration are as yet not well defined. His own experience would teach him to give small doses at first. If convulsions threaten, and a small dose do not arrest the muscular spasms, it may be increased to twenty minims, and the hypodermic injections may be repeated as often as every two hours. It must be given in sufficient quantities to control convulsions; neither the contraction of the pupils nor the number of the respirations is a reliable guide in its administration.

FISKE ON THE THERAPEUTIC USE OF ANILIN.—In the *Pacific Medical and Surgical Journal*, quoted in the *Philadelphia Medical and Surgical Reporter*, December 18, 1875, Dr. H. M. Fiske states that Dr. Justin, of Marseilles, finds anilin a valuable remedy in chorea. In one case the physician had given iron, quinine, and strychnia, valerian, and the multitude of remedies usually prescribed in such cases. But the spasmodic movements grew worse instead of better, and, in despair, the patient consulted Dr. Justin. On her being brought into his presence in an invalid's chair, he noticed the general cachectic and dreary appearance of the countenance, as indicating tuberculosis and muscular degeneration, common in the youth of that sunny clime.

The spasmodic movements were so great that she could hardly be retained in her chair, the least air or disturbance renewing them. He bethought himself of anilin, as one of the products of the coal-tar, and gave it in one-grain doses, four times a day, in pills, in connection with extract of gentian, directing the patient's bowels to be kept open with a pill, made after the following formula, one which he had found very useful in chronic constipation of adults:—

R. Nitrate of bismuth,	grs. xx	
Sulphate of alumina,	grs. xxx	
Extract of gentian,	q. s.	M.

To be made into 20 pills; one to be taken night and morning.

These were given so long as the constipation lasted, which was about two weeks.

The anilin at first produced a little nausea, which

soon subsided. After the fourth day of treatment it was continued with camphor, made into pills, one grain each. In two weeks the case was cured. Dr. Justin reports several cases in which like results followed. Dr. Peter Jones, of Terra Haute, Indiana, has also used it, with like success, in several cases, notably one which had continued for fifteen years. Dr. Aaron Wilson, of Nachitoches, has also used it, especially among the negro population, and with marked success. It is best to commence with half-grain doses of the medicine, gradually increasing, till two grains are given for a dose. Of the sulphate, three or four grains, gradually increased to eight or ten grains, may be used. It frequently produces a blueness of the skin, which soon passes away, and need not create any alarm.

MILLER ON THE FORM OF ALCOHOL TO BE USED MEDICINALLY.—In the *American Journal of Pharmacy*, Mr. A. W. Miller says:

Raw corn whisky or high wine, such as is used for the manufacture of alcohol, is undoubtedly strictly pure, as there is no incentive whatever to its adulteration. Nevertheless, many vile epithets, such as Jersey lightning, rot-gut, etc., are heaped upon this, simply because it is lacking in smoothness, oiliness, and body; so that it meets with little favour among those who are sufficiently familiar with it to recognise at once its want of age.

In the asthenic forms of many diseases, it is of prime and often even of vital importance to administer alcohol. Nothing as yet known so well substitutes the functions of food, and thus bridges over the chasm of greatest prostration, during which the system would otherwise inevitably succumb.

While we cannot and dare not dispense altogether with a drug of such inestimable value, what is there to be gained by running the unnecessary risk of inculcating a taste for the truly fragrant bouquets of choice French brandy, or the almost equally precious old Kentucky Bourbon? We can well afford to dispense with this meretricious and alluring *haut goût* of liquors, which, even in their purest state, are but too apt to win boon companions, ready and willing to follow their enticing solicitations.

The economic aspect is another strong point in favour of the introduction of plain rectified spirit into use as an official medicine.

We may sum up as follows. Rectified spirit is almost always strictly pure, while the more expensive liquors invariably contain fusel oil, and very frequently other impurities. While the taste and odour of rectified spirit is not so tempting as that of the choice cabinet liquors, it is entirely free from the disgusting smell and flavour of the ordinary diluted alcohol.

LEVI ON THE ACTION OF ERGOT.—In a paper in *Lo Sperimentale* for August and September 1875, Dr. G. Levi discusses the action of ergot on the uterus. He relates experiments made on bitches, in which contraction of the uterine muscular fibres was produced by the administration of phosphoric acid, in doses of from ten to twenty drops. Dr. Garzella also found uterine contractions to be produced in two cases in women by the use of fifteen drops of officinal phosphoric acid in water, taken in three doses. Dr. Levi arrives at the following conclusions. 1. The therapeutic effects of ergot are due to the presence of phosphoric acid. 2. The diseases in which ergot is an useful remedy derive equal benefit

from phosphoric acid. 3. In ergot, two distinct series of phenomena are produced by different elements: physiological (ergotism), by the vegetable principles (ergotin, ecbolin, etc.); obstetrical, by phosphoric acid. 4. The hæmostatic and erbolic effects are produced with equal intensity and readiness by phosphoric acid and by ergot. 5. The quantity of phosphoric acid found by analysis in recently powdered ergot, in old powder, and in the aqueo-alcoholic extract (ergotin) is proportionate to the obstetric effects produced by these substances respectively. 6. The results of these researches are confirmed by clinical reasoning.

DE SABBATA ON THE TREATMENT OF DIPHTHERIA WITH ACID SULPHATE OF IRON.—In the *Annali di Chimica applicata alla Med.*, October, 1875 (quoted in *Giornale Veneto delle Scienze Mediche*, December) De Sabbata says that, during a severe epidemic of diphtheria, he used an acid solution of sulphate of iron for gargling and for application by means of a hair-pencil. The formula for gargle was: pure sulphate of iron 5 grammes (77½ grains), dilute sulphuric acid 25 drops, water 100 grammes. For local application, the solution was a little stronger (70 or 80 parts of water instead of 100). He says that this solution completely destroys the characteristic sloughy odour, and removes the eschar in the submucous tissue, while carbolic acid only masks the odour and does not arrest the diphtheric process. He has treated forty cases in this way, giving also internally hyposulphite of soda and tannate of quinine. In these cases, the mortality was at the rate of 12½ per cent.

HUSEMANN ON THE ACTION OF SQUILLS.—In the *Deutsche Medicinische Wochenschrift*, no. 13, 1875, Dr. Husemann, of Göttingen, describes experiments which he has made on the action of squills, and arrives at the following conclusions. 1. The extract of squills of the German Pharmacopœia is very constant in its action on the animal organism. 2. The action on the nerves and muscular structure of the heart is similar to that of digitalin, digitalein, helleborein, antiarin, and other so-called cardiac poisons. 3. The diuretic action of the extract of squills can only be explained by its producing increase of the blood-pressure in conjunction with its action on the heart. 4. The indications and contraindications for the use of extract of squills in dropsy do not differ essentially from those of digitalin. 5. The extract of squills is not an expectorant. 6. It is not an antipyretic; there is, on the contrary, a constant rise of temperature both with large and with small doses. 7. The scillitin of the shops is uncertain in its action; hence its dose cannot be accurately determined, and it is not to be recommended as a substitute for extract of squills.

BONALUMI ON SUBCUTANEOUS INJECTION OF TINCTURE OF IODINE IN GLANDULAR SWELLINGS.—Dr. G. Bonalumi sums up a paper on this subject as follows (*Giornale di Medicina Militare*, November 1875, and *Gazzetta Medica Italiana-Lombardia*, March 4). 1. Parenchymal injections of tincture of iodine have a decided effect in producing reduction of glandular swellings of the neck and groin, which are common in soldiers. 2. The injections are also useful even when there is suppuration, especially if the pus be removed by aspiration, and the abscess

injected with a detergent fluid. 3. The best effects are produced in single swellings, not too old. The existence of ulceration of the capsule of the gland is a contrary direction to the use of this remedy. 4. This method is to be preferred to those hitherto employed on account of its harmlessness, the ease with which it is carried out, and its applicability to all patients. 5. Luton's plan of treatment is not only useless, but injurious, in scrofulous deposits in the neck, and it is useless in chronic hyperplasia of the tonsils and in lipoma. A. HENRY, M.D.

FRANCHIS ON CHLORIDE OF ZINC IN SOME CUTANEOUS AFFECTIONS.—In the *Paris Médical* for February 17 there is a notice of a paper by Dr. Franchis, in which he gives a *résumé* of eighteen cases of skin-eruptions treated by Dr. Lailler at the Hôpital Saint-Louis with chloride of zinc. The diseases were scrofulides and ulcerating syphilides. The author shows that chloride of zinc acts as a powerful modifying agent in lesions of this nature. He saw in many cases where tincture of iodine and acid nitrate of mercury were powerless to stop the ravages of syphilitic ulceration, that deliquescent chloride of zinc, employed with a brush on the edges of the ulcer, arrested it immediately.

VERNEUIL ON SULPHATE OF QUININE IN PAIN.—In one of his recent clinical lectures (*Paris Médical*, February 17) M. Verneuil took occasion to mention the fact of a woman afflicted with cancer of the uterus, with intolerable pain, which prevented her from sleeping. Narcotics having failed, and M. Verneuil having noticed that the pains were worse every second day, the surgeon prescribed sulphate of quinine in the dose of 0.50 centigramme. The same dose was continued for several days; the patient was able to take rest, and ultimately the pain disappeared. It results from these observations of M. Verneuil that quinine acts efficaciously, in concert with narcotics, in soothing the pains of uterine cancer; at the same time, there is no reason to attribute a paludal origin to these pains. W. DOUGLAS HEMMING.

THE HUNYADY JÁNOS WATERS.—There is a class of mineral waters which are rarely drunk at the places where they rise, but which are largely exported. They are called by the Germans bitter waters, on account of the taste which they have of Epsom salts. In England we have waters of this class, for instance, at Streatham, but they are not strong enough. These waters are all aperient, and their value has long been acknowledged. Thus the true Seidlitz water (what passes under the name of Seidlitz powder bears no resemblance to it) was long known in England as a fairly convenient aperient; but its chief ingredients, about 13.54 parts of sulphate of magnesia in 1,000 parts, were not sufficient to make it quite powerful enough. Two other waters of the same class, the Friedrichshall and Püllna, were imported from Germany some years ago, and have been much used in England, being superior to the Seidlitz water; and recently a Hungarian water, called the Hunyady János, has been introduced, which bids fair to be the most popular of all. The chief contents of these three waters will be at once seen by a glance at this table, which shows the relative amount of their salts in 1,000 parts:

	Friedrichshall.	Püllna.	Hunyady.
Sulphate of magnesia .	5'1	12'12	16'0
" soda .	6'0	16'11	15'9
Chloride of sodium .	7'9	—	1'3
" magnesium .	3'4	—	—
Total: including all constituents .	25'19	32'7	35
Relative proportion of carbonic acid free and half combined .	166'3	69	278'5

It is obvious that Püllna and Hunyady are the two richest in sulphated purging salts, while Friedrichshall contains a considerable amount of chlorides. None of these waters contain much carbonic acid, though the Hunyady has most, and has the advantage of containing a minute portion of carbonate of soda, amounting nearly to 1 part in the 1,000.

Of these waters the Püllna and Hunyady are, as might be conjectured, the most active aperients, the purgative power of small quantities of the chlorides not being great.

Aperient waters of this class are used in two ways; first, as ordinary purgatives, like a dose of medicine, when they are given in full single doses; secondly, to correct the habit of constipation, when they are given in small doses for a considerable period.

For the first purpose, on an average about half as much is required of the Hunyady as of the Friedrichshall, and very distinctly less than of the Püllna. The water of the Hunyady is mild, and of a comparatively pleasant taste, acts rapidly, and usually without almost any griping. It produces first soft and then copious watery motions. It increases the secretion of bile, but is not known to alter its quality. It diminishes the amount of urea and of water, and less nitrogen is excreted from the system.

For the second purpose, that is, for overcoming habitual constipation, the Friedrichshall has been the favourite in Germany. It is generally thought the least lowering, but is bulky, and not very certain in its operation. Püllna in smaller doses answers extremely well, and although its continued use is described as lowering, I have never seen any harm from its use extended over long periods. Hunyady water may be used in the same way, and there is no doubt of its efficiency, although there is not as complete evidence of its action in these small continued, as in its larger doses.

It is only thirteen years since the Hunyady water was discovered. There are six springs close to each other near Buda, with water of almost identical composition, and these waters are mixed together to form the water which goes by the name of Hunyady János. Its constituents do not vary in amount, as those of the Püllna are said to do.

All the first physicians of Germany have made extensive trial of the Hunyady, and have declared that it is the most certain and the most comfortable in its action of all the aperient waters. The special indications for its use are, in costiveness, especially in that of pregnancy, in portal congestion with tendency to hæmorrhoids, and in sluggish action of the liver.

A half or a full wine-glassful of the Hunyady water taken at bedtime produces a couple of soft motions next morning. One or two wine-glassfuls taken in the morning fasting, produce four or five motions, at first soft, afterwards watery. It is most efficacious when taken at a temperature not below 60°.

It is very evident that this convenient and sure

purgative, of whose action it is so easy to limit the extent, is a very valuable addition to our remedies; such a medicine may come into play in the treatment of almost any affection. It is not surprising to learn how extended its use is in southern Germany, and that its employment is rapidly spreading in England.

JOHN MACPHERSON, M.D.

RECENT PAPERS.

The Results of the Treatment of Rheumatic Polyarthritism with Salicylic Acid. By Dr. Stricker. (*Berliner Klinische Wochenschrift*, February 21.)

On the Behaviour of Acute Articular Rheumatism under the Galvanic Current. By Dr. Abramowski. (*Ibid.* February 14 and 21.)

The Therapeutic Value of Digitalis. By Dr. A. Patton. (*Cincinnati Lancet and Observer*, February.)

The Comparative Merits of Oil of Sandalwood and Balsam of Copaiba in the Treatment of Gonorrhœa and Blennorrhœa. By Dr. T. C. Minor. (*Ibid.*)

PSYCHOLOGY.

BRUNET ON THE CONTAGION OF INSANITY.—Dr. Brunet (*Annales Médico-Psychologiques*, 1875) has published a paper on the contagion of insanity.

After quoting almost every French alienist in support of these observations, Dr. Brunet mentions two cases in other journals—*Le Droit* and *Le Moniteur de la Côte-d'Or*.

Next follow descriptions of three cases observed by the writer himself, illustrating the theory of the contagion of madness.

The first case, which possesses a medico-legal interest, is thus summarised. Two brothers charged with arson—transmission of insanity from the elder to the younger—hereditary predisposition—trial in the Court of Assize—acquittal.

OBSERVATION I.—*Medley of Delusions of Grandeur and of Persecution—Hallucinations of Vision, Hearing and Smell—Stupor—Tendency to Dementia.*

Case 1.—Jean P., elder of the two brothers, aged twenty-eight, was admitted to the asylum of Breuty on February 24, 1874.

A sister was eccentric; a maternal uncle was insane from the age of twenty-three; a paternal uncle was also insane, and this uncle had had an imbecile son. The parents of the patient were below the average in intellect. The patient had had a previous attack at twelve years old.

On the night of January 2 or 3 (about two months before admission) he had set fire to his house, with the assistance of his younger brother. There was no apparent motive for the crime, as the brothers were in good work at the time, and had amassed not less than 600 francs by their industry. They lived almost completely isolated, and scarcely recognised their nearest neighbours. Their earnings were intentionally left to burn in the flames of the house. They voluntarily gave themselves up to justice, alleging, as an excuse for the act, that they had been terrified by the apparition of an enormous caterpillar in the chimney, which they fancied to be Death, and which they had wished to burn, fearing that it would carry them off.

There was a suspicion that intemperance had caused this demonstration of eccentricity.

On February 5, the day before the trial, the younger brother tore his clothes, became incoherent and stripped himself naked. This brother was sen

o the asylum of Breuty, to ascertain whether or not he was feigning insanity.

On February 18, Dr. Machenaud signed a certificate committing this patient to an asylum.

Both the brothers, during the period they were awaiting their trial, had affirmed that they had no other motive for setting fire to their house except the fear of the caterpillar in the chimney, which they also declared was full of spiders.

Twenty-four hours after admission, the brother Jean further asserted that he was God, and that he had, by setting fire to his house, destroyed Death, and that in consequence no one would ever die again. He had, moreover, delusions of grandeur mixed up with incoherence of language. Delusions of suspicion and an attack of acute maniacal excitement were developed subsequently, and he further confessed to having seen the spirit of an absent brother, who was in the army, drilling a regiment of mules on a common. Two attempts to escape, further suspicions of poisoning, and eating fæces, were the next symptoms noticed. A condition of acute dementia, uninfluenced by electricity or other stimuli, and a refusal to speak, were the chief points observed during the next four months.

May 1. He was removed for a further trial.

OBSERVATION II. (upon Clement P., the brother of the above patient)—*Intermittent Excitement—The same Delusions as his Brother—Recovery.*

He was admitted to the asylum of Breuty February 6, 1874.

Feb. 7. He was excited and incoherent. He had been singing all night.

Feb. 10. There were onanism and a delusion that he had set fire to his house to destroy Death, who had appeared to him as a yellow caterpillar. Neither he or his brother concerned themselves about the loss of their furniture. He confessed to habits of intemperance, but was not aware that he was said to be insane, or that he was in an asylum.

March 2. He tore up his blanket because it was of a green colour, saying that he ought to have one of the natural colour of the wool. His brother had also the same idea. He declared he was God, and had suspicions of being poisoned.

May 1. He was in a condition of acute mania. He was removed for further trial at the Assizes Court. Drs. Brunet, Eyriaud, and Machenaud declared the prisoners to be both insane.

May 5. The brothers were tried at the Assize Court. Drs. Brunet and Eyriaud gave evidence that they believed the prisoners to be insane on the following grounds.

The eldest brother had exhibited symptoms of dementia impossible for any one to feign. The younger had had several attacks of maniacal excitement, with fetor of breath, heat of skin, and acceleration of pulse, about the nature of which there could be no doubt.

Dr. Brunet affirmed that he believed that the insanity had been communicated from the elder to the younger brother—the elder having had a previous attack at twelve years old; that they were predisposed to this affection by their hereditary antecedents; that the life of isolation, the excess of drink, and the onanism easily explained the access of the malady in these two brothers.

Dr. Eyriaud gave similar evidence, and both prisoners were acquitted and sent back to the asylum at Breuty.

[A few remarks on this novel theory of the conta-

gion of insanity may perhaps be not out of place here.

Anyone who has studied the habits of the insane is aware that one patient will frequently imitate the actions, gestures, and even the language of another. In certain forms of acute mania, the patient will repeat the last words anyone near him may have said, mixed up with his own incoherence. But it must be confessed that for one patient to imitate the delusion (or hallucination in this case) of another is something quite new to us. It is true that sometimes several melancholiacs will refuse food on the same day under the same delusion that it is poisoned; but if we inquire into the details of such delusions, we shall find that they differ. One man believes that the doctor is poisoning him, another that his relations are doing so, and a third that evil spirits are conspiring against him.

We could have wished Dr. Brunet had been a little more clear in his account of these two cases. We should like to know if the delusion about the caterpillar was first announced by both brothers when in one another's company, which would prove the contagion of the delusion, or if this same delusion was elicited subsequently upon medical examination of the brothers separately. If the latter, the case would still be one of great psychological interest. For it would illustrate the fact that two brothers, similarly constituted in their bodily and mental organisms, had simultaneously and independently propagated this same extraordinary delusion.

We should also like to be informed whether or not the two brothers were kept separate in the asylum. We find the same delusion there developed in both cases—that a green blanket was objectionable, and in consequence was torn up. Had the brothers objected to green blankets when they were living together before their admission to the asylum? or, if together in the asylum, did one brother copy the other's delusion? Or was the delusion developed, the brothers being in separate sleeping rooms?

These are points upon which we should like to be further informed. The cases are, nevertheless, most carefully reported, and no one can doubt that both brothers were insane at the time the act was committed, and also during the period of their residence in the asylum.—*Rep.*]

The other cases in support of this theory are as follows.

Mdme. X., under the delusion that her solicitor had swindled her, followed him about, and so aspersed his character, that he brought an action against her for defamation. Her relatives having to pay heavy damages, thought it wiser to place her in an asylum, she having, moreover, become violent after losing her cause. After some months, under the promise to give up the pursuit, she was discharged from the asylum. She at once recommenced her attacks upon the solicitor, and other acts of violence were committed. She was then brought to Dr. Brunet for examination.

Opposed by Drs. C. and N., Dr. Brunet declared the lady to be insane. It may be mentioned here, in parenthesis, that one of these gentlemen accused Dr. Brunet of inventing the delusion of his patient to serve his own purposes. We trust that the fact of one brother of our profession accusing another of a deliberate act of falsehood is a form of defence which will never be introduced into this country.—*Rep.*]

The opinion of the other doctors was, nevertheless,

accepted, and Madame X. was again liberated on the condition that she left the country.

[The point of the whole case, however, lies in the fact that the children are said to have inherited the same delusion from the mother. We are unable to perceive how this second illustration points to the theory of the contagion of insanity. If the delusions were really such on the part of the children, they would not alone have constituted insanity. If not real delusions, we can quite imagine children having been so prejudiced in their youth against this notary by the mother, as to believe that he had really swindled them, and in this case the mistakes of judgment of the children would not amount to the pitch of true delusions.—*Rep.*]

The third case is one of a lady aged thirty, who was placed in the asylum at Dijon, as she suffered from delusions of persecution and hallucinations of hearing. She heard voices of people who tormented her, and prevented her gaining her livelihood.

The patient's mother visited her some few weeks after her admission to the asylum, and declared that her daughter had never been insane, that not only had the daughter been really persecuted, but that her enemies had addressed (*sont adressés*) her (the mother) herself for some days, and had wished to bring her to the deepest misery.

The delusions (?) of the mother, communicated to her by the daughter, not being accompanied by hallucinations or unreasonable acts, were not considered sufficient grounds for depriving her of her liberty.

[We should like to know in this third case if there were any grounds for these delusions on the part of the mother. If there were no grounds for them, then decidedly it is the strangest of the three cases illustrating the theory of the contagion of insanity.—*Rep.*]

The paper concludes by the general remarks that in asylums patients can transmit their delusions from one to another, that the study of cerebral physiology easily explains the contagion of insanity, and that at certain epochs, mesmerism, spiritualism, and table-turning have been known to influence a large number of people at the same time.

With regard to this last statement, it may be remarked that such people are not under certificate in an asylum, and that they cannot, therefore, be considered insane in the usual acceptance of the term.

[We have thought it necessary to dwell at some length on this new theory. The point at issue really is not whether insanity generally is communicable, but whether or no delusion is so.

Nobody needs to be told that the insane will imitate one another's monkey tricks, such as making grimaces, extravagance of costume, talking to themselves, and running or jumping about the airing court. We all know how one noisy patient is able to stir a whole ward into a state of turmoil in a very short time. But we must confess to not having yet discovered an instance of one patient distinctly communicating a delusion to another. The very essence of insanity is selfishness, and the insane are usually so much occupied about the consideration of themselves, their supposed injuries, and their delusions, as to find but little time to sympathise with another to such an extent as to catch a delusion from or to impart a delusion to him.

The only point of value about the paper is found

in the first case, where the two brothers, being in (we suppose) separate rooms, developed the same delusion about the green blanket. But this would more illustrate the fact of people similarly constituted (as in the case of twins) being attacked at the same period of life by a non-infectious malady—such as Bright's disease—than that one of them had contracted the same delusion from the other. It is to be hoped that this new theory will not be received until more evidence is produced on the subject of the contagion of insanity.—*Rep.*]

H. SUTHERLAND, M.D.

PONZA ON THE INFLUENCE OF COLOURED LIGHT IN THE TREATMENT OF THE INSANE.—Dr. Ponza, Medical Director of the Asylum at Alexandria, says (*Annales Médico-Psychologiques*, January, 1876) that he happened to read that an English navy captain had succeeded in wonderfully improving the condition of certain animals by putting them constantly under the influence of violet light, and had also developed extraordinary growth in fruit and vegetables by covering them with violet bell-glasses. He then wrote to Father Secchi, director of the astronomical observatory, to ask him if this influence was due to the electro-chemical rays, from whom he obtained certain data, the chief of them being that, 'The walls of the room serving for experiment should be painted of the same colour as the windows, and there should be as many windows as possible, that the light might be received directly at different hours of the day.' Following this advice, he placed in a red tinted room, with red windows, a patient suffering from melancholia, who had long been dull, taciturn, and difficult to feed. Three hours afterwards this patient was visited, and Dr. Ponza found him gay and smiling, and asking for food. A second case was no less instructive. 'J. B., melancholic, who remained all the day with his hands pressed against his mouth to stay the introduction of poisoned air, was placed in the red chamber. Next day he rose, swallowed breakfast with great avidity, and in few days his discharge, as cured, was recommended.'

In a blue-walled chamber Dr. Ponza placed an excited and irritant patient in a strait-waistcoat; in a few hours he was much calmer. Blue light is very active on the optic nerves, as proved by the following incident: One day Dr. Manfredi was conducted into the blue-room after his eyes had been bandaged, and he had been walked several times round the asylum; as soon as he entered the blue room he was aware of it, from the sensation of a strange feeling of oppression.

He then placed an insane patient in a violet chamber; next day the patient asked to be sent home, feeling quite well. He left the asylum, and is well now.

On examining by the spectroscope the curves of light, it is at once seen that the violet rays are those which possess the most intense *electro-chemical rays*, that red light is just as rich in *heat-rays*, whilst blue light is absolutely destitute of calorific, chemical, and electrical rays. Hence the beneficial influence of the latter, since its negativeness is well calculated to soothe the furious agitation of maniacal persons.

The influence of altered light may be with advantage extended to other nervous diseases, chorea, hysteria, epilepsy, puerperal eclampsia, etc.

[There can be no doubt that Dr. Ponza has opened up an interesting subject. It has been long known,

and acted upon, that in treating the insane a *darkened room* is a great calnative. Again, patients who have been supposed chronically insane in gloomy asylums have recovered on being transferred to better-lighted buildings. Hallucinations of vision and temporary colour-blindness are common in all forms of insanity, and it is not difficult to see how, on other than electric caloric or chemical grounds, these phantasies might be met by coloured rooms. The connection of colour with insanity may be again traced in the bits of coloured rags with which many, especially women, adorn themselves, and the choice of *one colour* is by no means uncommon. It is very difficult to get at the real motives of the insane for the refusal of food, but it is quite conceivable that one who refuses drink from the notion that the fluid is blood, may, under the influence of a coloured light, have his subjective state changed by an alteration in the objective conditions. Coloured light is not dissimilar from tones in music, an art too much neglected in the treatment of the insane. The reporter has often been able to infuse life into an apparently demented patient by music of a properly selected character. A notable instance occurs to him in the case of an epileptic who, up to last week, seemed demented and devoid of interest in what was going on around her. The reporter happened to sit down to the piano and play a lively air, when to his surprise she jumped up and danced vigorously, and has been better ever since. The reporter intends to study more accurately the influence of different colours and musical tones in insanity. He has a patient now under treatment, suffering from what he diagnoses as cerebellar disease, involving also the posterior cerebral lobes, before whom he had placed five shawls, coloured violet, black-and-green, white, red, and blue; she preferred the white one; next to that the black-and-green; on no account would she wear the red, blue, or violet. He has another (epileptic) who will only wear red neckties, and it is notorious to alienists how fastidious the epileptics are in choice of colour. Many reflections are opened-up by this question of light, *e.g.* the influence of the Romish religion and of the high church parties by their coloured glass, decorations, and highly coloured music; the exuberance of spirits in Italians and Frenchmen living under a clear white light; the excess of feeling in an audience when the lime-light under coloured aspects is thrown on the stage.—*Rep.*]

T. CLAYE SHAW, M.D.

OBSTETRICS AND GYNÆCOLOGY.

PERUZZI ON A CASE OF OVARIOTOMY DURING SEPTICÆMIC FEVER: RECOVERY.—Dr. D. Peruzzi describes in the *Raccogliore Medico* for September 1875 a case in which he performed ovariectomy in a patient suffering from septicæmic fever, arising from inflammation of a cyst with decomposition of its contents in consequence of puncture.

The cyst was elliptic, having its greater diameter extending from the left central arch to the right groin. Above it, and passing under the xiphoid process, was a hard knotty mass, the dullness over which was continuous with that over the spleen.

On July 21 a puncture was made in the cyst, and gave exit to a dark sticky fluid, like syrup. As this escaped, the hard portion receded more and more from the spleen, until it lay at the level of the um-

bilicus. Nine kilogrammes of very albuminous fluid were removed. On the day on which the puncture was made fever set in, and continued eleven days. It was accompanied by pain, limited to the locality of the cyst. The patient had vomiting and diarrhœa, and wandered in her sleep; her hearing became obtuse, the sclerotic and skin had an icteric tint, and in August once there was a general miliary eruption. It was evident that the case was one of septicæmic fever, the cause of which lay in the ovarian cystic tumour.

Remembering that Dr. Keith had operated in thirteen such cases with only two failures; that Spencer Wells had operated in similar conditions; and finally calling to mind a case in which Wiltshire and Watson had operated successfully on a patient whose life was in danger from hæmorrhage into an ovarian cyst, Dr. Peruzzi performed ovariectomy on August 1. The omentum was adherent to the cyst; four ligatures were applied to it. The pedicle, which was long, large, and flat, was tied. Drainage was practised through the utero-rectal fossa.

Three-fourths of the tumour consisted of a large cyst with very thick walls; the remainder was formed of small cysts with thinner walls. The process of inflammation and decomposition was limited to the large cyst, which had been punctured. Recovery proceeded regularly; the healing of the wounds being nearly complete by the seventeenth day.

A. HENRY, M.D.

TARNIER ON MILK DIET IN THE ALBUMINURIA OF PREGNANT WOMEN, AND ITS INDICATION AS PREVENTIVE TREATMENT OF ECLAMPSIA.—In *Le Progrès Médical*, no. 50 (December 11, 1875) M. Tarnier communicates two cases in which chloral succeeded perfectly in relieving the albuminuria and preventing eclampsia.

The urine contained 55 per cent. of albumen in one case, and under the microscope showed the presence of a large quantity of cells in a state of granular fatty degeneration, hyaline casts and blood corpuscles. Two litres of milk daily were prescribed; the œdema gradually disappeared, and the patient had a normal labour, the child being alive, large and healthy.

The second case was similar, and was delivered naturally at full term of a living healthy child.

Dr. Tarnier suggests that on the first day one litre of milk and two portions of food should be given, on the second day two litres and one portion, on the third day three litres and half a portion, the fourth and following days, four litres, or as much as desired, and no other food or drink. The author remarks that cases of eclampsia may occur without albuminuria, but they are very rare. In cases treated by this method, the albuminuria has either disappeared or diminished rapidly, and eclampsia has never supervened.

BUDIN ON SECTION OF THE UMBILICAL CORD.—In *Le Progrès Médical*, no. 3, January 15, 1876, Dr. Budin concludes an interesting series of articles as to the proper time when ligature of the umbilical cord should be practised. From seventy-five personal observations, he concludes that if ligature of the cord be effected immediately after the birth, we deprive the child of about 92 grammes (over 3 oz.) of blood from the placenta, which is equivalent in the adult to a loss of 1,700 grammes (58 oz.). From this it follows that section should not be performed

until one or two minutes after the complete cessation of the pulsation of the cord. As to the practical question whether it is of any inconvenience to the mother as regards delivery, although certain authors recommend leaving the placenta gorged with blood in order that its separation may be facilitated, M. Budin feels assured that the placenta empty of blood is thrown off more easily, and passes more readily through the contracted cervix, than when it is gorged with blood.

In simple asphyxia of the child it is necessary to allow it to breathe freely and to cry before tying the cord, and to abstain from allowing blood to flow from the cord.

BEIGEL ON THE PATHOLOGY OF DYSMENORRHOEA MEMBRANACEA.—Dr. Beigel (*Archiv für Gynecologie*, Band ix. Heft 1) in an exhaustive article on this subject, arrives at the following conclusions from the results of his examinations.

1. The so-called dysmenorrhœa membranacea occurs in consequence of primary or secondary disease of the uterine mucous membrane—endometritis.

2. The characteristics of this disease consist in a pathological change of the mucous membrane, whereby, in consequence of well-marked cell-proliferation from beneath, the membrane is shed in large shreds or as a continuous sac.

3. The expulsion of this, as a rule, occurs through contraction of the uterus after preceding hæmorrhage, menstrual or otherwise, whereby closure of the os internum by the membrane leads to retention of blood and the production of intense pain.

4. As menstruation plays a secondary part in the development of this affection, and the formation of the membrane is in no way connected with conception or abortion, it seems better to give up the terms 'dysmenorrhœa membranacea,' or 'menstrual decidua,' and adopt the denomination 'endometritis exfoliativa.'

5. The microscopic examination of the membrane furnishes no similar results. In one class of cases we find the normal elements of the mucous membrane merely pathologically increased; in another series the individual elements of this, as the glands or epithelium are lost or in a state of degeneration; in a third class embryonal cellular tissue is formed; and in a fourth epithelium plates or cells, which are very similar to these, alone or in conjunction with the embryonal tissue of the skin-elements of the membrane.

6. In all cases it forms a marked cellular production, constituted of free cells, which form the definite occasion of the loosening of the mucous membrane from its attachment.

7. The pathological changes of the uterine mucous membrane in endometritis exfoliativa appear to be such, that the development of an impregnated ovum in the uterine cavity cannot take place; therefore the patients, as long as they are under the influence of the disease, are sterile.

ARTHUR W. EDIS, M.D.

BREINIG ON RETENTION OF MENSES FROM OCCLUDED OS UTERI.—In the report of the Northampton County Medical Society (*Transactions of the Medical Society of the State of Pennsylvania*, vol. x. part 2), Dr. P. B. Breinig reports a case of retention of menses, for over three years and a half, from occlusion of os uteri, resulting from adhesive in-

flammation produced by severe and protracted labour.

Mrs. O. B., aged twenty-two, in company with her husband and her attending physician, Dr. K., visited him July, 1873, when the following history was elicited. Her health was always good during her single life, and during her pregnancy. In May, 1871, she gave birth to a stillborn child after a severe and protracted labour of nine days, in consequence of which she was very much prostrated, recovering slowly. After due course of time, her menses not returning, medical aid was secured to reproduce them, without benefit. Dr. L. was applied to, and, upon examination with the speculum, found the womb completely closed up. He declined to operate, regarding her case as incurable.

Upon examination the patient was found of medium size, physically well developed, without the appearance of being an invalid. She complained much of distress in the head, vertigo, irritable stomach, pain in the left side and back. The bowels were costive; the appetite variable. There was no discharge per vaginam. Upon further examination by touch and speculum, the womb was found to be enlarged to about thrice the normal size, the orifice entirely obliterated, scarcely a sign being left whereby the os uteri could be discovered.

Consent being had, assisted by Dr. K., a careful dissection was made with Sims' hysterotome, through the os and neck, followed by dilators until a sound could be introduced within the body. Contrary to expectation, but little flow resulted from the operation, and that without much fetor. This operation was followed from time to time by the introduction of sponge and sea-tangle tents, until a free opening through the neck was established. In 1874 she was discharged.

Under date of May 8, 1875, the husband of the patient wrote to Dr. Breinig that his wife had menstruated four times at regular periods, though in a slight degree, after an absence of nearly four years.

MUNSON ON STRAPPING THE BREASTS TO PREVENT AND ARREST LACTATION.—Dr. W. W. Munson of Otisco, remarks (*New York Journal*, November, 1875), that strapping the breasts to prevent lactation seems to be considered a matter of some importance by Dr. Peaslee, as stated in his remarks before the New York Academy of Medicine; he would say that he had used this means four years, in a large number of cases, not only to prevent lactation, but to arrest it after the flow has commenced, where it has been desirable to dry up the milk, after death of the child, or for ulcerated, retracted, or imperfectly developed nipples. A failure has not occurred in a single instance, even in those very large breasts where an abundant flow of milk had been going on for several weeks. He gives details of some very successful cases, and adds: Strapping will be of no use unless it is well done. Let the first strip be put on so as to hold the breast well up by itself alone, whichever direction it is made to take. He usually commences by placing a strip laterally beneath the breast, about half-way between the nipple and lower margin, draws the gland well up, and attaches one end high up on the sternum and the other end high up under the arm. The next strip is placed at right angles to the first, close to the nipple. It is applied to the breast, drawn well up, and the upper end is fastened. It is then brought over the shoulder and is drawn down and firmly fastened. Holes are cut

through the strips that pass over the nipple, so that it may project through. This is to allow the milk which may ooze out for the first few hours to escape, without burrowing beneath the plaster, pushing it off, and making a hot, disagreeable, irritating poultice. Several thicknesses of soft cloth should be placed over the nipple (when pervious), to absorb the milk that escapes. This should be renewed as often as it becomes saturated. A timely application of this plan of strapping he has found almost sure to arrest commencing mammary abscess.

WELLS ON A CASE OF PROLONGED GESTATION. Dr. Frank Wells, Professor of Obstetrics and Diseases of Women and Children in Cleveland Medical College, relates in the *Boston Medical and Surgical Journal* for December the case of Mrs. M., who had sexual intercourse with her husband on August 27, 1874. On the following day her husband was called away on business, which detained him from home until the existence of pregnancy had declared itself by the cessation of the catamenia. She quickened in the early part of January, 1875, and naturally expected to be confined about June 3, for which period she engaged her nurse. Labour did not come on, however, until June 26, nor was it completed until the following day, three hundred and four days from the date of sexual congress. The birth, which was tedious, necessitating the use of the forceps, was characterised by the almost entire absence of liquor amnii. The child, which weighed eight and one half pounds, looked as though it had been in a measure macerated in the amniotic fluid. In November it was healthy and vigorous, and weighed eighteen and a half pounds.

HUGGINS ON A CASE OF PRECOCIOUS DEVELOPMENT IN A CHILD.—Dr. J. Huggins, of Newbern, Alabama, relates the following case in the *Virginian Medical Monthly*, for December. In May 1874, he was called by a negro to visit his little daughter, who was suffering from the general derangements of the system incident to the period of dentition. This condition readily yielded to appropriate treatment. The mother of the child called his attention to a very strange development of the genital organs and mammary glands. On inspection he found the two mammae uncommonly large, being about two and a half inches in diameter, and projecting outwards about an inch. The nipples were correspondingly developed. The genital organs presented a still more precocious development. The labia were unusually large and covered thickly with hair about an inch long. The mons Veneris was also coated with hair, which was not so long as that on the labia.

This precocious development continued about six months, when it arrived at its maximum. The child was then not quite two years old. The two breasts were now about three inches in diameter and otherwise well developed. The hair about the pudenda was longer and more abundant. In a word, the parts were as well developed as they should have been in a girl of fifteen years.

About this time other singular phenomena were presented. About every four weeks the child complained of pains in the lower part of the abdomen, in the region of the right ovary. On examination, Dr. Huggins found considerable hardness and some enlargement in that portion of the abdomen. This hardness continued for several days and then

gradually subsided, but never to its normal condition. Dr. Huggins gave the child bromide of potassium and warm hip-baths. The condition became more aggravated each month until paralysis of the right leg was the result and the child was unable to walk; he then gave iodide of potassium internally and the tincture of iodine externally.

In a few days after commencing this treatment the menses came on, or at least a fluid similar to the menstrual flow ran out of the vagina and continued for about two weeks. In about a month the hardness and paralysis had almost disappeared, and the child was running about in apparent good health. The mammae were reduced to about one-fourth their former size, and since then no material change has taken place in the case. The child is somewhat precocious in intellect as well as physique. In fact the expression of the child's face and the general contour of her features remind one more of a large sized girl than of a little child.

The parents of this child are perfect specimens of the black race, healthy, and have several other children besides the one herein mentioned.

In commenting on this case, Dr. Huggins expresses his belief, which he asserted in a previous report on a similar subject, that all *deformities*, *monstrosities* and anomalies which are met with in the human race, are found more frequently in the black than in the white.

TAYLOR ON HÆMATOCELE OF THE AMNION.—At the meeting of the New York Academy of Medicine on September 16 (*New York Medical Record*, October 9), Dr. Isaac E. Taylor presented a specimen of what he called hæmatocele of the amnion. The placenta was delivered at eight months. The hæmorrhage had taken place between the chorion and amnion, and the amnion could be distended by means of a blow-pipe sufficient to cover a surface six and a half or seven inches in diameter. The specimen was regarded as analogous to one reported by Cazeaux; but in Cazeaux's case the hæmorrhage was between the placenta and chorion. The umbilical cord was attached to the thin delicate amniotic membrane, and when the specimen was removed, the bloody distension of the space between the amnion and chorion was about the size of a large egg.

HAUSSMANN ON THE OCCURRENCE OF CATARRH OF THE FEMALE GENITALS AT VERY EARLY AGES. Dr. Haussmann (*Berliner Klinische Wochenschrift*, January 31) remarks that Kluge thought that all the syphilitic affections of the new-born infant were acquired *in partu* from the mother (see Bärensprung, *Die Hereditäre Syphilis*, Berlin, 1864), an opinion which has not been confirmed by more extended researches. It must, however, be confessed that we do not possess sufficient knowledge of the exact workings of this temporary contact between the mother and child in the act of birth. It is much to be wished that every vaginal catarrh, even those considered harmless, could be cured. Dr. Haussmann has demonstrated for some years past that the liquor amnii bears away with it the greater part of the vaginal mucus, and, further, that during birth the child may get portions of these discharges into its mouth and other natural openings. (See the *Centralblatt für die Medicinischen Wissenschaften*, no. 49, 1869, and *Die Parasiten der Weiblichen Geschlechtsorgane des Menschen und einiger Thiere*, Berlin, 1870.) It is easy to understand, in this way, how

the child's mouth is first affected with thrush (*soor*) of parasitic nature.

Roederer,* Haller,† and Daroz,‡ as well as Carus§ and Bouchut|| have observed a white milky discharge in the vaginae of new-born infants. It does not appear that any of these authors examined it microscopically. Haussmann, in repeating his former observations,¶ found some mucous corpuscles, as well as ordinary pavement-epithelium in the vaginal mucus of a little girl of a week old. In one out of three still-born female children he also found many of these corpuscles in the vagina, whilst no such bodies were found in the normal, healthy, delicate mucus of the uterine canal and other parts of the sexual organs. Donné,** Kölliker and Scanzoni,†† and Robin,‡‡ and many others state that in a normal condition the vaginal mucus only contains pavement-epithelium, or at most a few free nuclei and bacteria. It is clear, therefore, that in the case mentioned there must have been either catarrh of the vagina in the child *in utero*, or that these mucous corpuscles passed from the vagina of the mother to that of the child. In the case of the older child mentioned above it is quite possible that the vulvo-vaginitis was from a sponge contaminated by the mother, as Gaillard Thomas, J. Steiner, §§ and R. Barnes has noticed in other cases. Dr. Haussmann has examined again twenty newly-born female children, and has only found mucous corpuscles at all in four of them; viz. in a 1½, two 3, and one 3½ days' old child. In the remaining sixteen there were none.

Raulin||| thought that leucorrhœa was often inherited, like epilepsy or consumption, and many of the older writers shared this opinion. Without denying it, it would seem unlikely that all the cases should occur so young. On the other hand, the parasitic growths, such as the *oëdium albicans* of Robin, present in the vaginal discharges of the mother, are easily transferred *in partu* to the new-born child; and find their way into the mouth, producing thrush, and into the labia pudendi, thus generating vulvo-vaginitis. He cites Vogel, Gerhardt, R. Maier, Bouchut, and others, in support of this opinion. He is inclined also to blame Sir Charles Locock and Dr. Barnes, the former for saying (in the *Cyclopædia of Practical Medicine*, vol. iii. London, 1834, p. 38): 'In the latter months of pregnancy, leucorrhœa may be looked upon rather as a relief, unless excessive,' and the latter for agreeing with him.

Haussmann says that no leucorrhœa is harmless. The mothers must be looked after during pregnancy; the newly born children should be carefully examined

for any vaginal discharges, which should be carefully treated from the first.

[The original article contains many references to obstetric and other authors, which want of space would not allow to be reproduced here.]

W. BATHURST WOODMAN.

RECENT PAPERS.

Physiological Study on the Maternal Souffle and the Abdominal Wall of Pregnant Women. By Dr. F. Glenard. (*Archives de Tocologie*, February, 1876.)

Study on an Uncommon Form which may be assumed by the Uterus during Pregnancy. By Dr. Depaul. (*Ibid.*)

On the Weight of New-born Children. By E. Ingerslev. (*Obstetrical Journal*, February, 1876.)

Folding Short Forceps. By Dr. Draper. (*Ibid.*)

On the Use of Drainage in Ovariectomy: with a Report of twenty-five Operations. By R. Olshausen. (*Berliner Klinische Wochenschrift*, March 6 and 13.)

On an Operation for Prolapsus Uteri. By Dr. J. Baumgärtner. (*Ibid.* February 28 and March 6.)

Eclampsia following Mastitis. By Dr. Panthel. (*Deutsche Medicinische Wochenschrift*, February 19.)

Cæsarean Section on Account of Carcinoma of the Vagina: Remarks on Suture of the Uterus with Catgut. By Dr. W. Tauffer. (*Ibid.* February 26.)

On Intra-uterine Medication. By Dr. C. Liebman. (*Annali Universali di Medicina e Chirurgia*, February.)

Unusual Uterine Hæmorrhages. By Dr. Fordyce Barker. (*New York Medical Journal*, January 29.)

Fracture of the Pelvis during Labour. By Dr. J. von Massari. (*Wiener Medizinische Wochenschrift*, February 12.)

DERMATOLOGY.

WIGGLESWORTH ON IDIOPATHIC MULTIPLE ROUND-CELLED SARCOMA OF THE SKIN.—Dr. E. Wigglesworth, jun., publishes in the *Archives of Dermatology* for January a case of idiopathic multiple medullary round-celled sarcoma of the skin; and adds a retrospect of all recorded similar cases.

A woman, aged forty, noticed in April 1872, a band of small spots, like mosquito-bites, extending across the epigastric and hypochondriac regions. The spots forming this band were faintly pinkish, slightly elevated, hard and discrete. They increased in number, and retained their colour. They were not painful or tender and did not itch.

Dr. Wigglesworth saw her in January 1873, and examined her partially. A complete examination was allowed on February 15. On the external aspect of the upper right arm there was a well-defined firm, convex, bluish-red unlobulated lump, about an inch in diameter at the base, adherent to the skin, slightly elastic, smooth and without fissures or ulceration. No pain was produced even on strong pressure. There were two similar smaller nodules on the upper left arm, one on each side of the lower third of the biceps muscle; on the right forearm, seven, on the left forearm three small, discrete, violet-red firm, slightly prominent infiltrations. The temperature of the spots was normal, and no pulsation or fluctuation existed. The smaller spots upon the forearms shaded off gradually as to colour and consistency into the surrounding skin and were movable with it. The lymphatic vessels and glands were unaffected.

There was a large nodule on the left eyebrow; and forty to fifty additional nodules and spots on the breast, back, inner aspect of the thighs, and nates.

The tumour on the eyebrow was removed on March 8. The wound healed by first intention; but

* *Icones Uteri Humani Observationibus illustrati*. Göttingen, 1759, p. 36. 'Vagina autem tota plena esse solet liquore crassiusculo, quasi albo pure, vel crasso lacte.'

† *Elementa Physiologia Corporis Humani*, tom. vii. liber xxxiii. sectio II. § 48, p. 76. Bernæ, 1765. 'In fetu albus et lacteus humor.'

‡ *Grundriss der Zergliederungskunde des Neugeborenen Kindes*, Band II. Giessen, 1793, § 223, s. 181.

§ *Lehrbuch der Gynäkologie*, Band I. Leipzig, 1828. § 382, s. 290.

¶ *Traité Pratique des Maladies des Nouveau-nés*. Sixième édition. Paris, 1873, p. 716.

|| *Loc. cit.*, p. 123.

** *Cours de Microscopie*, Paris, 1874, p. 155.

†† Scanzoni's *Beiträge zur Geburtskunde*, Band ii. Würzburg, 1855.

‡‡ *Leçons sur les Humeurs Normales et Pathologiques*. Seconde édition. Paris, 1874, p. 575.

§§ *Compendium des Kinderkrankheiten*, 2 Auflage. Leipzig, 1873, p. 342.

||| *Traité des Fleurs Blanches*. Paris, 1766. Tom. i. p. 7.

before long a new nodule formed in the cicatrix. Diarrhœa set in and lasted three days, and was followed by aural catarrh and deafness. Some of the nodules on the legs broke down and ulcerated, and after a few weeks she died from exhaustion. There was no necropsy.

The tumour which was excised 'was spherical, of the size of a large cherry; the surface smooth, covered with a thin translucent layer of epidermis, beneath which were scattered irregularly minute transparent, sago-like granules; balls of epidermis were contained in the dilated hair-follicles, also occasional hæmorrhagic points.'

The cells of the tumour examined fresh were round, relatively uniform in size, considerably larger than a white blood-corpuscle. They contained a nucleus which was large in proportion to the cell. In sections from the hardened specimen, the cells were seen to be imbedded in a reticulated, delicate fibrous stroma, the meshes of which enclosed as a rule single cells. Nuclei in the stroma were not observed. The nodule contained few blood-vessels, but some extravasated blood. The hair-follicles, and the sebaceous and sweat glands, were intact. Large nerve-trunks traversed the diseased tissue. The growth seemed to originate in the papillary layer, extending downwards into the subcutaneous tissue. The specimen was regarded as a round-celled medullary sarcoma.

The case is analogous to those reported by Korte, Köbner, Webber, and Kaposi, but differs in some respects from all of them. It differs from Kaposi's in not having begun on the feet and hands, and in belonging to the group of large-celled sarcomata.

WEISSE ON FOLLICULITIS SEBACEA.—In the *Archives of Dermatology* for January, Dr. F. J. D. Weisse has an article on folliculitis sebacea. This name is suggested as a comprehensive term for the various kinds of acne. The author's own summary of this paper is as follows.

1. In all so-called acne lesions of the sebaceous follicles, a certain degree of inflammation of the follicular wall exists.

2. Folliculitis sebacea would seem to be a much more comprehensive and suggestive generic name for this class of lesions than is the term acne.

3. A deficient ingestion of fats marks the dietary of most patients suffering from folliculitis sebacea.

4. The deficiency of animal oil in the blood of the capillaries of the follicular wall, renders the sebum less fluid; hence stasis of sebum occurs, which pressing on the follicular wall irritates it; inflammation of the same takes place, and hence the several varieties of folliculitis sebacea.

5. The internal therapeutics should be restorative, in furnishing fats to the blood.

6. The external therapeutics should be antiphlogistic by extrusion of follicular contents, douches of hot water, sulphur and camphor lotion, and bismuth and chalk powder.

TAYLOR ON PARTIAL ATROPHY OR PALSY OF THE SKIN.—A case of a rare form of idiopathic localised or partial atrophy of the skin, is published by Dr. R. W. Taylor in the *Archives of Dermatology* for January.

Dr. Taylor's patient was a woman aged forty-five, who had previously enjoyed good health and had borne healthy children. On the extremities and sparsely on the abdomen there were groups of round

and oval patches of skin, of various sizes, from the diameter of two lines to that of half an inch as a limit, having a whitish glossy appearance very much resembling mother of pearl. The surfaces were smooth, but showed the openings of some of the follicular ducts. The patches ended by a sharp well defined margin, and the surrounding integument seemed normal. They were slightly depressed below the level of the skin, and contained no hairs.

Other patches scattered among the white ones were of a light brown colour, somewhat darker than the colour of tinea versicolor. These brown patches were an earlier stage of the white ones, and became white if the epidermis were removed. The former were hyperæsthetic whilst the latter were somewhat anæsthetic. The brown patches grew very slowly; about six months elapsing between the time of the appearance of a small brown spot and its full development as a patch of the largest size.

The woman's appearance at the time was that of a thin, weak and delicate person, whose nutritive processes were performed in a faulty manner, and whose assimilation was imperfect.

Dr. Taylor regards the case as an instance of atrophy of the whole structure of the skin, in the form of round and oval spots, the affection not following previous infiltration, but being atrophic from the beginning. He distinguishes it from the morphœa of Wilson by the absence of infiltration, although he points out that his case closely resembles the morphœa alba atrophica of that author.

G. THIN, M.D.

MARTINEAU ON THE TREATMENT OF PITIRIASIS CAPITIS BY SOLUTION OF CHLORAL.—In a paper read before the Société de Thérapeutique of Paris, reported in the *Bulletin Général de Thérapeutique*, Dr. Martineau advocates the treatment of pityriasis capitis with solutions containing chloral. After remarking on the persistence of pityriasis and its obstinate resistance to the numerous drugs which have been tried against it, Dr. Martineau says, 'If I am not deceiving myself, chloral offers us a means if not certain at least very efficacious for the treatment of this rebellious affection.' In the hands of Dr. Martineau and also of Professor Tardieu, the following solution has given excellent results: water, 500 grammes, hydrate of chloral 25 grammes. This solution should be made lukewarm and applied, in the morning, with a sponge to the diseased parts. The part touched with it must not be wiped. If the pityriasis be recent, a single application will often suffice for its cure; if it be old, it disappears to reappear later on. The solution of chloral always has the effect of causing a disappearance of the rash and the pruritus, so that it is sufficient to continue the lotion in a case of chronic pityriasis until the patient suffers no inconvenience from his disease. If the pityriasis be complicated with any other cutaneous affection, as erythema or prurigo, it is necessary before employing the solution of chloral, to use the following liquid: water 500 grammes, hydrate of chloral 25 grammes, Van Swieten's solution 100 grammes. This solution should be used every morning with a small sponge. When the affection which complicates the pityriasis has disappeared, the chloral solution may be returned to. The application of solution of chloral causes immediate redness of the skin and provokes slight itching, but these inconveniences only last a few minutes.

W. DOUGLAS HEMMING.

RECENT PAPERS.

- On Elephantiasis of the Nose and its Treatment by Decortication of that Organ. By M. Ollier. (*Lyon Médical*, March 5.)
- Favus. By Dr. H. G. Piffard. (*New York Medical Journal*, February 12.)
- On Syphilis: A Clinical Study. By Dr. A. C. Smith. (*Ibid.* February, 1876.)

OPHTHALMOLOGY AND
OTOLOGY.

GALEZOWSKI ON THE IMPLICATION OF THE FACIAL LYMPHATIC GLANDS IN AFFECTIONS OF THE EYES.—M. Galezowski (*Recueil d'Ophthalmologie*, January, 1876), says that the lymphatic vessels of the face are in intimate relation with those of the eyeball and its appendages, and appear to communicate directly with the lymphatic glands in the parotidian region in front of the ear, and also with other glands beneath the lower jaw; and these in their turn are closely connected with numerous glands in the neck.

It has long been recognised that syphilitic sores upon the eyelids may give rise to glandular enlargements in front of the ear and beneath the jaw. This was shown by Ricord and Desmarres. It is, however, to be noted, that amongst English writers Jacob (*Dublin Hospital Reports*, vol. vi.) has expressed his opinion that cancerous affections of the eyelids do not implicate the neighbouring lymphatic glands; according to the experience of Galezowski, however, these glands may become engorged and swollen not only in consequence of syphilitic chancres, but also with phlegmonous inflammation of the eyelids, with certain forms of conjunctivitis, with herpes palpebralis, and occasionally with affections of the lachrymal sac.

With reference to syphilitic affections of the eyelids, it is not yet clearly shown that any but primary chancres will involve the neighbouring glands, although Galezowski has seen one or two cases in which their swelling has been noticed with secondary affections of the conjunctiva. The case in which glandular enlargement was associated with a lachrymal tumour, and which is recorded at length in the paper, was a remarkable one. It was that of a young girl, in whom an enlargement of all the glands of the face and neck followed inflammation of both the lachrymal sacs; in this instance the glands of the chin, as well as the masseteric, buccal, and submaxillary glands were involved, although it is probable that in this instance some special diathesis was at work to produce this very extraordinary continuation of symptoms.

It is, according to the author's experience, abundantly clear that the enlargement of the facial glands may arise under various conditions, quite independently of syphilitic affections.

GALEZOWSKI ON THE CURABILITY OF DETACHMENT OF THE RETINA.—M. Galezowski's experience (*Recueil d'Ophthalmologie*, January, 1876) has shown him that in a certain proportion of cases of detachment, a cure may be effected by surgical treatment. Of 211 cases of detachment which he has tabulated, he finds but 13 instances in which it has occurred in eyes that were not myopic, so that he assumes that a myopic conformation of the eye is almost indispensable for its production. He con-

siders also that he has established the fact that the detachment is always due to subretinal effusion which is brought about by a serous cyclitis; in support of this view, he adduces the frequent occurrence of iritis at the outset of the disease. The subsequent formation of cataract, too, is the result of an affection of the choroid and not of the retina. According to the researches of Poncet (*Société de Biologie*, 1873) the posterior portion of the choroid presents very little trace of parenchymatous inflammation in serous choroiditis, while the ciliary zone almost invariably does so to a considerable extent; and in consequence of this the detachment in these cases commences at the ora serrata, and may extend to the neighbourhood of the papilla. Dr. Galezowski considers that the detachment which is met with in cases of glaucoma has its origin in the same way; and his own practice has shown him that an iridectomy has proved sufficient to arrest the progress of the detachment, and to bring about a great improvement in vision in a considerable number of instances. An analysis of the author's table of cases shows that detachment is almost confined to eyes which are myopic; that it is twice as frequent in the eyes of men than of women; that it is very often complicated by iritis or cataract; and that it may be brought about in consequence of injury, by syphilis, or by rheumatism.

At the very commencement of the affection and in young subjects, much benefit may be obtained by antiphlogistic treatment, but it will be necessary that the patient should remain for several weeks in a horizontal position, and that he should certainly abstain from using the eyes. In this way Dr. Galezowski considers that he has cured several such cases, and he formulates the results of his experience in his concluding sentences.

1. Detachment of the retina admits of cure.
2. In recent cases, and especially in young subjects, antiphlogistic treatment combined with absolute rest will sometimes bring about a complete recovery.
3. In detachments of long standing an iridectomy is capable of arresting any further progress, but it will not prevent the occurrence of cataract.
4. In cases brought about by syphilis, mercurial treatment by inunction will effect a cure.
5. In an eye in which a detachment has receded, one generally finds a white striated appearance where the retina has been disturbed, with more or less evidence of atrophy of the subjacent choroid.

BOWATER J. VERNON.

THEOBALD ON TINNITUS AURIUM.—Dr. Theobald, in the Transactions of the Medical and Chirurgical Faculty of Maryland (*Chicago Medical Journal and Examiner*, November, 1875), gives his opinion of the cause of imaginary sounds in the ear. He thinks, in the first place, that the tinnitus is invariably due to an excitation of the terminal elements (not the trunk) of the auditory nerve; and after a careful consideration of the facts which seemed to have any bearing on the subject, he has been led to the conclusion that in almost all cases, tinnitus aurium, whether associated with aural affections, cerebral diseases, or constitutional disorders, is to be attributed to the existence of vibrations excited in the walls of the blood-vessels of the labyrinth, by the friction attending the circulation of the blood, which are capable of imparting to the labyrinthine fluid, and thence to the terminal fibres of the audi-

tory nerve, impulses similar in character to those which are produced by the vibrations of the stapes, and hence, like them, capable of giving rise to the sensations of sound.

The vibrations of these vessels can produce a sensible impression on the auditory nerve in two ways. First, the intensity of the vibrations may be increased. Second, the vibrations remaining unaltered, their effect upon the nerve may be magnified by reflection and contraction, or by resonance. The first condition will obtain whenever the natural and easy flow of blood is perturbed, as in hyperæmia and anæmia of the labyrinthine vessels, by partial compression of the vessels by inflammation or other causes; especially by an incursion of the stapes by which the tension of the labyrinthine fluid is increased. By the second mode—resonance or reflection—the tinnitus is produced which accompanies the affections of the middle and external ear. The conducting apparatus of the ear is defective; therefore, sonorous undulations from without fail to reach the auditory nerve, and on the other hand sonorous vibrations arising in the ear are not allowed to escape; they are reflected, concentrated, and their sound magnified.

GUYE ON THE DANGERS OF BREATHING BY THE MOUTH.—At the international medical congress in Brussels in 1875, Dr. Guye read a paper in the otological section (*Archiv für Ohrenheilkunde*, February 4, 1876), on the dangers to the ear of breathing by the mouth. According to the author, the habit of breathing by the mouth, frequent among deaf people, is a very pernicious one, and he is much surprised at the almost entire absence of papers on the subject. Respiration by the mouth, which is easier than respiration by the nose, cannot with safety be substituted for it, as nasal respiration answers certain requirements which oral breathing cannot supply. The function of the nose in respiration is threefold. 1. The olfactory sense secures it against the entrance of impure air. 2. The moisture of the nasal passages gives a certain degree of aqueous saturation to the inspired air, the contact of which is thus rendered less irritating to the mucous membrane of the throat and larynx. 3. The inequalities of the organ retain solid particles suspended in the air, which is proved by the quantity of dust sometimes found accumulated in the nostrils.

These advantages are absent in respiration by the mouth. The contact of dry air soon produces circulatory troubles in the pharyngeal region, and even an habitual catarrh, susceptible of easy transmission by continuity to the Eustachian tube and cavity of the tympanum. Granular or adenoid pharyngitis often has this origin. In support of his opinions the author adduced the authority of Dr. Paul Niemeyer of Magdeburg, who considered that the attacks of pseudo-croup, to which children are often subject during the first hours of the night, had their origin in dryness of the glottis produced by oral respiration. To obviate this inconvenience the principal object was to restore the nose to its proper condition, and for this purpose it is important to oblige the patient to breathe by the nose. As we cannot rely on the will of the individual, especially if a child, Dr. Guye proposes to produce occlusion of the mouth by a little instrument of the shape of the respirator, but differing from it in this essential particular, that it is entirely impermeable to air. This 'contra-respirator,' as the author calls it, constitutes a simple and easily

applied means which has produced excellent results in Holland. Dr. Guye cited cases of catarrhal deafness which he had completely cured by this means alone, without any other treatment. [The danger to the Eustachian tube of breathing by the mouth was recognised by Mr. Toynbee, who, in his work on the Diseases of the Ear, in speaking of the treatment of obstruction of the faucial orifice of the Eustachian tube by thickened mucous membrane, advised the patient to practice nasal respiration.—*Rep.*]

BURCKHARD-MÉRIAN ON THE PROPHYLAXIS AND TREATMENT OF AURAL DISEASES.—Dr. Danjoy, in the *Annales de Maladies de l'Oreille et du Larynx*, for December 31, 1875, gives an abstract of a lecture on the above subject, delivered by Dr. Burckhard-Mérian at the Medical Society of Bâle, which was reported in the *Correspondenz-Blatt für Schweizer Aerzte* for September and October, 1875.

The author commences by showing what are the most common causes of diseases of the ears and by what means they may be best avoided. He points out in the first place awkward attempts at cleanliness made with sharp instruments—hair-pins, steel pens, pencils, matches, etc. These instruments may not only wound the auditory canal, but they may even lacerate the tympanum, either by direct contact or indirectly, if they touch a plug of hardened wax. He proposes in their place a small sponge fixed at the end of a handle, this sponge, as long as the auditory canal, sufficing perfectly for cleansing it. Injections are equally pernicious in numbers of instances, either because they are used too cold or because they are made too forcibly. The author thinks also that some discharges are maintained by too frequent injections; he prefers in such cases to make insufflations of astringent powders. Fumigation by vapours, and the dropping in of oil, are also far from being inoffensive. In certain cases there has been found at the bottom of the meatus and near the tympanum a deposit of oil which, remaining at a temperature of about 37° (98° F.) underwent a change, and became the seat of aspergillous vegetation, thus affording a new cause of irritation for the neighbouring parts. Instillations of irritant liquids, often made on account of toothache or neuralgia, may similarly cause external otitis; we need only mention ether, chloroform, alcohol, etc.

Instead of poultices, which often favour the production of diffuse inflammation, the author prefers the introduction of some drops of tincture of opium on cotton-wool, the application of one or two leeches in front of the ear, or cold, which has never caused accident when the necessary precaution has been taken of preserving the auditory canal with cotton-wool.

Cold, which has just been mentioned as an advantageous therapeutic agent, may be the cause of diseases of the ear, the author instancing in the first line among the external causes of these affections, exposure to a current of air as one of the most frequent. When the ear has been cleared from a plug of wax, it should be protected by a little cotton-wool against the external air, for fear of cold. Patients should also carefully guard themselves against cold when they take sea-baths, river-baths, or when they are following hydropathic treatment. The author mentions finally discharges of fire-arms, startling noises, boxes on the ear, as frequent causes of otitis, and concludes the paper by some therapeutic considerations. W. DOUGLAS HEMMING.

WEBER-LIEL ON THE MEMBRANA TYMPANI SECUNDARIA.—In the January number of the *Monatsschrift für Ohrenheilkunde*, Dr. Weber-Liel, of Berlin, records the following experiments which he has made on the membrane of the fenestra rotunda.

1. Having prepared a dissection in the manner described in a former paper, he placed on the external meatus an India-rubber tube, and breathed gently through it. Watching the secondary tympanic membrane under an enlargement of from 15 to 40 linear, he found that it moved outwards and inwards with the inspiratory and expiratory acts, and it appeared to do so relatively to a greater extent than the simultaneously moving drum.

2. Closing the tympanic cavity by means of a covering glass, he, through a catheter in the Eustachian tube, condensed the intratympanic air by driving in air from an India-rubber bag. Under this pressure the secondary membrane was very slightly pressed inwards, while the primary membrane was pressed strongly outwards. On rarefying the air in the cavity by suction, the secondary membrane bulged, especially in the under portion, in a direction outwards and backwards, and on condensing the air, it moved into its former position.

3. The same was observed when the same preparation was used with the inco-stapedial joint loosened, or when the labyrinth was opened.

4. When the investigator fastened to the round membrane a small feather taken from the wing of a canary, and caused a condensation of air with an open tympanic cavity, and an inco-stapedial joint intact, a very short motion of the feather was observed; but when the air in the meatus was rarefied, the feather was seen to move to a greater extent in a direction outwards and backwards. When the feather was dusted with fine starch-granules and one sung or fied into the meatus through an India-rubber tubing in connection therewith, the excursions of the light reflex from the starch-granules were seen to have the same direction.

5. On opening into a preparation of the labyrinth, and cementing a thin tubule into the scala tympani, he found that suction at the other end of the tubule caused only a slight shaking of the membrane, and that it was more tightly expanded, but did not move inwards. But when the air in the scala tympani was condensed, the membrane was widely pressed outwards, especially at certain points.

6. In three fresh preparations the superior semi-circular canal was opened, and a fine glass tubule inserted, and cemented thereto, care being taken that no labyrinthine fluid escaped. This glass tubule was so placed in connection with an India-rubber tube, that motion on the end of the tubing did not break the tubule. The secondary membrane was now placed where it could be examined microscopically; and on suction being made through the tubing the membrane moved towards the labyrinth.

From these observations it follows that the membrane of the fenestra rotunda is capable of greater excursion than has been supposed; further, that it follows easily and quickly all changes of pressure, both from the fenestra ovalis and the tympanic cavity. Towards the labyrinth it moves, but very slightly, from its position of rest, on account of the counter-pressure of the labyrinthine fluid. Towards the tympanic cavity the membrane is capable of great excursion to a certain point.

BUCK ON MEDICATED EUSTACHIAN BOUGIES.—In the *Transactions of the American Otological Society* for 1875, Dr. Alfred H. Buck advises the use of medicated Eustachian bougies as the best means of bringing nitrate of silver into close proximity with the middle sac when it is desirable to do so. He uses the old whalebone, or catgut bougie, not exceeding one millimetre in thickness. Roughening the sides of the bougie at one end, he twists cotton-wool round it, so that a bulb of wool is formed of $2\frac{1}{2}$ millimetres in diameter. This serves not only as a soft covering for the point of the bougie, but also as a sponge for holding a sufficient quantity of the remedy to be used. The cotton-bulb, having been saturated with the solution to be employed, is passed into the Eustachian tube about five-eighths of an inch beyond the end of the conducting catheter, 'or fairly to the membranous or osseous portion of the tube. The instrument should remain there for a few seconds, or perhaps a minute, and then be withdrawn.' He uses nitrate of silver in preference to any other remedy, and has used it in strengths varying from the solid salt to a solution of twenty grains to the ounce of water, 'without setting up any unpleasant reaction.'

W. LAIDLAW PURVES.

RECENT PAPERS.

Description of a New Ophthalmoscope and Ophthalmometer, devised for Clinical Use and for Physiological and Therapeutic Investigations upon Man and Animals. By Drs. Edward O. Shakespeare. (*American Journal of Medical Sciences*, January, 1876.)

On the Etiology of Ear-Disease in General: a Contribution to the Principles of Aural Surgery. By Dr. J. P. Cassells. (*Glasgow Medical Journal*, January, 1876.)

Are the Questions of Adaptation and the Questions in connection with it yet solved? By M. Colin. (*Gazette des Hôpitaux*, January 18, 1876.)

On Symptomatic Conjunctivitis. By Dr. Cuignet. (*Recueil d'Ophthalmologie*, January, 1876.)

Remarks on the Progress and Termination of certain Detachments of the Retina. By Dr. Vieusse. (*Ibid.*)

Exophthalmia consecutive on Sarcoma. By Dr. Baudon. (*Ibid.*)

On Hereditary Amblyopia. By Dr. Pufahl. (*Berliner Klinische Wochenschrift*, March 6.)

REPORTS OF FOREIGN SOCIETIES.

MEDICAL SOCIETY OF BERLIN.

November 17, 1875. *Primary Infective Osteomyelitis*.—Dr. L. Friedmann read a paper on this subject, and related a case. He remarked that the terms primary infectious osteomyelitis and periostitis were introduced by Lücke to designate a disease which had received various names from different authors. About twenty-two years ago, Chassaignac first discovered the disease, and called it 'essential osteomyelitis,' 'typhus of the bones,' 'typhus of the limbs,' 'spontaneous diffuse osteomyelitis.' Klose speaks of meningo-osteomyelitis; Gosselin describes it as 'epiphysal osteomyelitis'; Wernher as 'epiphysal osteochondritis'; Waldeyer as 'periostitis'; Roser as 'pseudo-rheumatic inflammation of the bones and joints in youth'; and R. Volkmann describes partly it as 'spontaneous osteomyelitis,' partly as 'malignant periostitis.' Finally, Bardeleben, in the latest edition of his work, treats of it under the heading 'inflammation of the bones before the completion of

growth.' Lücke points out its identity with an infective disease. In its symptoms and course it bears the closest resemblance to pyæmia; and those authors who speak of spontaneous pyæmia are not in error, if it be allowed that in this case there is a disease which arises and runs its course like an infective disease, but which has its origin not in the intestinal canal nor from an injury, but in the hitherto intact marrow or periosteum. The disease is special to the period of life when growth is not completed. The geographical range of the disease is said to be limited; and but few cases have been observed in Berlin. Dr. Friedmann's patient was a boy aged eleven, previously healthy, who, some weeks before he first came under observation, fell while engaged in gymnastic exercises, and complained of pain in his leg. He was, however, still able to go to school. On October 11, he complained suddenly of pain in the left thigh, especially about the knee, and went to bed. On October 12 his medical attendant diagnosed incipient coxitis, and ordered rest, leeches on the hip-joint, and the application of a bladder of ice. On the 15th, when Dr. Friedmann first saw him, the temperature was (to the touch) normal, and the pain was somewhat abated. The left leg was somewhat bent, but was neither abducted and rotated outwards as in the initial stage of coxitis, nor adducted and rotated inwards, as when the disease is more advanced. Passive movements at the hip-joint could be made without pain and without moving the pelvis. There was pain and slight swelling in the left groin. On the next day, without rigor or any other premonitory symptom, very high continued fever set in. The skin was dry and burning hot; temperature 104° Fahr.; tongue rough and fissured; pulse 130. Passive movements of the hip-joint and pressure over the shaft of the femur produced severe pain. There were also bilateral parotitis and swelling of the left submaxillary gland. The spleen was not enlarged, nor were there any indications of disease in the intestinal canal. On the 20th, the skin was pale, earthy, but not icteric. The patient had constipation. In the upper third of the thigh, and also over each knee, was a slight oedematous swelling; over the right patella was a limited redness, beneath which fluctuation could be indistinctly felt. The parotitis had considerably increased. The left thigh was still tender, and it was believed that there was malignant periostitis. On the 22nd, the left parotid gland had decreased in size, and the swelling of the left thigh and knee had almost disappeared. On the 23rd, small abscesses, varying in size from a linseed to a pea, appeared under the skin of the abdomen on the left side. The soft parts of the left thigh presented nothing abnormal, nor did the limb appear larger than the right. Sometimes, however, emphysematous cracking could be detected with the finger, especially near the knee-joint. The patient lay comatose, but answered and put out his tongue when loudly spoken to; he had the *facies Hippocratica*. On the evening of the same day he died. At the necropsy, the left femur, which was shown, presented the following appearances, revealed on longitudinal section. Nearly the whole of the marrow was in a state of purulent osteomyelitis, a few free points only existing in the centre of the great medullary cavity. There was diffuse purulent infiltration from the epiphysal lines through the whole of the spongy portion, reaching nearly to the middle of the bone; there were also a few small disseminated purulent collections in the epiphyses.

Nearly all authors have called attention to the frequency of separation of the epiphyses in primary infective osteomyelitis; and it was interesting that both at the upper and lower parts of the femur cavities were found in the epiphysal cartilages, indicating the commencement of separation. Nothing abnormal was found in the cortical substance of the femur. The periosteum was separated from the bone by purulent collections for a rather considerable extent close above the knee and below the hip. The left knee-joint was sound; the hip-joint contained pus, but the articular cartilages, the round ligament, the capsule, and the cartilage of the acetabulum, were unaffected. No bacteria or any similar organisms were found in the pus of the marrow, or in the subperiosteal abscesses. There was a subperiosteal purulent collection at the upper part of the right tibia; it had opened into the knee-joint, but without destroying the cartilages or ligaments. The abscesses in the abdominal wall contained an abundance of pus. There was a moderate amount of ichorous exudation on the pleura and pericardium; and the muscular substance of the heart contained fibrino-purulent deposits. There was a fibrinous deposit in the left heart. There were no fatty embola or abscesses in the lungs: but the upper lobes were in a state of commencing hypostatic pneumonia, and the middle and lower lobes presented grey hepatisation. There was some sero-purulent fluid on the peritoneal cavity. The liver, spleen, and kidneys were normal. The examination of the head, or of the parotid glands, was allowed. The veins contained thick tarry blood, like that of septicæmia. Speaking of the relation of the disease to typhus (enteric) fever and acute articular rheumatism, Dr. Friedmann said that the diagnosis from enteric fever was very easy, especially in consequence of the early appearance of the local symptoms and the absence of enlargement of the spleen. He had, moreover, had several cases of typhus in the neighbourhood of the house where the patient lived, and, from the similarity of the symptoms, was led to believe that the origin of the disease in his case of osteomyelitis and in the cases of enteric fever was the same. The diagnosis from polyarthritis rheumatica in its most severe form—as described by Kussmaul and Volkmann—lay in the fact that pressure on the femur in an early stage of the disease produced pain at a part which was found to be the seat of purulent deposit, and in the small number of parts affected, as well as in the circumstance that primary infective osteomyelitis is much more frequent in youth than the severer forms of rheumatic polyarthritis. That the osteomyelitis was the primary disease, and not the periostitis, was shown by the fact that there was only a slight swelling of the soft parts of the thigh; as well as by the amount of destruction of the marrow and the commencing separation of the epiphyses. He called special attention to the absence of rigors at the outset of the disease, which Lücke had also observed in eight out of twenty-four cases.

December 1. *Primary Infective Osteomyelitis*.—In connection with Dr. Friedmann's paper, Dr. Senator described a case of primary infective osteomyelitis. During life, the patient, a girl about fifteen years of age, presented symptoms which were regarded as indicating enteric fever; there was a very moderate affection of the thigh, which was attributed to a fall from her bed; and the true nature of the disease was only discovered by the necropsy. He thought that it was a too one-sided view to regard the general

affection as secondary to the osteomyelitis; there might be cases in which the affection of the marrow was secondary, as had been shown by Ponfick; e.g. the disease of the marrow in relapsing fever. Murchison had said that he met with necrosis in several cases of enteric fever in young persons: perhaps some of these were cases of osteomyelitis. Dr. P. Güterbock had seen six cases of the disease; two had also occurred in his father's practice, and one in that of Dr. Wilms. He believed that it was more common than was generally supposed, and that it was not limited to young subjects. Acute osteomyelitis might occur in the following circumstances:—1. When there was a specific infection; 2. When there was destruction of the integrity of the bone closing in the medullary canal; 3. When some proximate cause (a wound or cold) was present. The course and result of osteomyelitis following amputation was by no means essentially different from the affection described by Dr. Friedmann. The former occurred under various conditions, but was generally complicated with pyæmia. In a case to which he briefly referred, there was a non-febrile interval of two days between the appearance of the disease in the bone and an attack of pyæmia, of which the patient died twelve days afterwards. Between such cases and that related by Dr. Friedmann there were many transitional ones, in which the traumatic cause was more apparent. Some of his own cases were examples; also one related by Roux, in which the disease was set up by a bullet that did not completely penetrate the bone; and also one of Cæsar Hawkins, in which the scraping out of an abscess of the tibia was followed by local sloughing, pyæmia, and death; metastatic abscesses being found in the lungs and septic inflammation in the pleura and peritoneum. The tibia was much inflamed, and there were purulent deposits in the spongy substance and several ecchymoses. The way in which infection reached the bone was not the same in all cases. In patients who had a bullet in the medullary canal and suffered comparatively little trouble from it until osteomyelitis broke out with a sudden rigour, there was, so to speak, an already existing affection, which localised itself as osteomyelitis in the weakest part. Just so, in the osteomyelitis of young subjects, the disease of the bone, as Volkmann had shown, stood in the same relation to general infection as a suppurating subcutaneous fracture to pyæmia. Diseases of bones resembling the so-called spontaneous osteomyelitis might occur in the course of glanders, as was shown by a preparation of a clavicle in the museum of St. Bartholomew's Hospital in London. The disease affected all parts of the bone; but it was advisable to retain the name osteomyelitis, both on account of the importance of the condition of the medullary canal, and to avoid increasing the already superabundant nomenclature of bone-diseases. It was incorrect to assume that the medulla was not implicated because drops of fat did not escape spontaneously or on incision.—Dr. Goldammer had observed, in conjunction with Dr. Güterbock, two cases of osteomyelitis of the femur and tibia, and had seen three others in which the humerus, femur, and tibia were affected. Of the patients, three were aged from thirteen to sixteen, and two were twenty years of age. The case of osteomyelitis of the humerus had been diagnosed as one of articular rheumatism. After the patient's death, there was found to be osteomyelitis, with separation of the upper epiphysis and embolic deposits

in the lungs. Two patients with osteomyelitis of femur were admitted into hospital as cases of typhus; one of them died, the other left the hospital after some time with a rather considerable enlargement of the femur. Of the two cases of osteomyelitis of the tibia, one died, and numerous embolic deposits were found in the lungs; the other recovered, after amputation of the thigh, and in his case the knee-joint and medullary cavity of the tibia were found filled with pus.—Dr. Julius Wolff had endeavoured, but as yet without success, to gain accurate information as to the frequency of pernicious primary osteomyelitis in Berlin. It was certain, however, that the disease occurred there more frequently than had been generally recognised. He had been told by Virchow that primary osteomyelitis was rather frequently met with at the necropsies in the Charité Hospital. It must be remembered that in many cases the disease was treated as typhoid or as acute articular rheumatism. On the other hand, it would be an error to regard the disease as one of every day occurrence, and generally known. For several years Orth had not met with a case; and of the twenty cases recorded by Bardeleben, most occurred in Greifswald. The disease appeared to occur more frequently in some parts of Berlin than in others, especially in the 'Bethaniengegend.' He (Dr. Wolff) considered that traumatic osteomyelitis was altogether distinct from the primary form of the disease. Traumatic osteomyelitis had its origin in an open suppurating focus, to which, as in pyæmia, secondary deposits were associated. Primary osteomyelitis ran its course like spontaneous pyæmia, and the etiological condition might be a trifling injury, or no injury at all but a chill. Although the symptoms of primary osteomyelitis resembled those of enteric fever, there was nothing in common between them, as osteomyelitic disease and intestinal ulcers were not met with together.—Dr. E. Küster differed from the opinion of Dr. Wolff as to the identity of osteomyelitis with pyæmia. Osteomyelitis was in all cases a disease *sui generis*, which might, but did not necessarily, lead to pyæmia. He thought that there was no essential difference between the traumatic and the primary forms of the disease, if the absence of a wound in the latter case were put aside. The infective character of the disease was not clearly proved, and he preferred the name primary or spontaneous osteomyelitis, which did not prejudice the question. The course of the disease varied much in intensity. But even the most severe and rapid cases had nothing so very extraordinary in them, when it was remembered that absorption of decomposed matter took place very readily in bone, and that feeble anæmic badly nourished subjects, as those in most of the cases related appeared to be, were liable to very extensive disturbances from causes which would scarcely affect the healthy. He thought that the disease in question must be regarded as being at first a purely local affection, which, under unfavourable conditions of the diseased part and of the individual, easily led to secondary disorders, to infection of the whole body.—Dr. Retslag had seen a case of osteomyelitis in a patient aged nineteen, who recovered in the Charité Hospital after amputation of the thigh.—Dr. D. Löwenstein had seen a case of osteomyelitis which had been mistaken for enteric fever, but in which the great painfulness of the leg led Dr. Bardeleben to diagnose the true character of the disease. The tibia was the bone affected, and the patient recovered after his thigh

had been amputated.—Dr. Wolff said that Dr. Küster had misunderstood him as to the identity of the character of the disease in osteomyelitis and pyæmia. What he meant was, that there was a striking resemblance between them in the occurrence, first of primary, and then of secondary, purulent deposits.—Dr. Ewald said that in a number of cases of enteric fever there was very severe pain in the ankle-joint, which generally passed off, but might lead to error. In not a few cases it was impossible to establish the differential diagnosis between osteomyelitis and enteric fever.—Dr. Senator had to add to the report of his case, that no micrococci were found in the pus, and that the neighbouring joints were quite free from lesion. He had not desired to identify or to confound enteric fever and osteomyelitis; but the latter might arise in the course of diseases such as enteric fever, as it was known to have done in glanders.—After some further remarks from Drs. Güterbock, Friedmann, Goldammer, and Wolff, the discussion was closed; the president, Dr. Henoch, remarking that he regarded the opinion of Dr. Küster, that osteomyelitis was a purely local affection, as the most correct one.

December 8. *Effect of Injections into the Ear on the Pressure in the Labyrinth*.—Dr. Weber-Liel made a demonstration on a preparation of an ear, to show with what ease variations of pressure on the labyrinth might be produced by simple injection into the external ear. The preparation was taken from a man on whom, during life, giddiness and fainting were produced by injecting the ear with water for the purpose of dislodging an accumulation of cerumen, after the removal of which a loss of substance was observed at the upper part of the membrana tympani. The symptoms were regarded as reflex, from irritation of the auricular branch of the vagus nerve. Experiment, however, showed that they were dependent on the variations of pressure within the labyrinth produced by the injection.

Salicylic Acid and Salicylate of Soda.—Dr. Ewald made a report on the experiments which he had made in Dr. Frerich's wards with salicylic acid and salicylate of soda. He found that the latter was to be preferred as being more reliable in action, and not producing the uncomfortable feelings which followed a dose of salicylic acid. The salicylate was given either in single doses of 5 or 2½ grammes, or in daily quantities of 5 grammes (77 grains), divided into doses taken every two hours. It was only with the first form of administration that striking results were obtained, the temperature falling as much as 72° Fahr. in from five to ten hours. Of one hundred cases of enteric fever, during the height of the disease, the afternoon temperature in eighty was reduced below that of the morning by a single dose of the salicylate of soda given at noon. Among the symptoms produced by the salicylate the most important was profuse perspiration, which set in five or ten minutes after the administration of the medicine. There did not appear, however, to be any direct connection between the sweating and the lowering of the temperature. Nausea was produced in a few cases only, and was in these prevented by adding three to five drops of chloroform to the medicine just before it was taken. The appetite remained good in all the cases; there was no pain in the stomach, and the peristaltic action of the intestines was increased—at least, the stools became more copious. The action on the pulse and respiration was almost *nil*. Symptoms of intoxication,

such as noises in the ears, faintness, and slight hallucinations, were shown in two cases only, and soon passed off. While he regarded salicylate of soda as at least equal to all other antipyretics, he warned against its incautious administration to weak cachectic individuals, in whom the great and rapid lowering of temperature might easily lead to dangerous collapse. He had found it useful also in other acute and chronic febrile disease; but in intermittent fevers salicylic acid was without effect.—Dr. Goldammer confirmed Dr. Ewald's observations as to the effect of salicylate of soda in lowering the temperature. He had not, however, been as yet able to convince himself that the course of cases of fever was changed even if the temperature were lowered. He had seen cases apparently mild at first end fatally, although a favourable influence had been produced in the temperature by the use of salicylate of soda.—Dr. B. Fränkel regarded the substitution of salicylate of soda for salicylic acid as important, since, in two cases of mild diphtheritic inflammation of the fauces treated with salicylic acid gargle (1 in 100 of glycerine), he had seen produced inflammatory swelling of the whole of the mucous membrane of the pharynx.

December 15.—*Infant Mortality in Berlin*.—Dr. Baginski made a communication on this subject. In 1875, from January to October 1, 24,388 persons died in Berlin, of whom 11,700 were children under one year old, and 3,897 were from one to five years. Infantile cholera and diarrhoea caused death in 5,267 children, of whom 4,692 were under one year. The months of greatest mortality were June (1,383), July (1,766), and August (1,088). He regarded this mortality as dependent on the simultaneous action of a number of very important meteorological phenomena, in the falling of the ground-water, the increase of temperature of the air and ground, the diminution of atmospheric moisture, and the absence of rainfall. He cited also Schwabe's remarks on the danger of cellar-dwellings, and described some experiments which he had made with human milk and with children's food. Having placed human milk, cows' milk, Swiss milk, and Nestlé's and Tempe's foods, at a temperature of 37° Cent. (98.6° Fahr.), he found that human milk resisted decomposition longest; then came cows' milk and Swiss milk, and lastly the artificial foods. The latter appeared to keep better when prepared with water to which cows' milk had been added. He insisted on the importance of healthy dwellings and good milk.

ACADEMY OF MEDICINE IN PARIS.

January 25, 1876. *Glanders Leucocythæmia*.—M. Colin, continuing his description of his investigations on the blood in glanders, began by endeavouring to determine what should be understood by the term virulence. He contested M. Chauveau's investigations into the virus of vaccine and glanders, and condemned the diffusion method, by which two liquids of different density were superposed in the hope that one would by diffusion yield a portion of its principles to the other. Vaccine, an albuminous liquid, could scarcely yield anything to the water above it. The method of washing, applied to glanders, was scarcely more conclusive; the first waters of the washing transmitted the disease, the last were innocuous, because they only contained changed elements. M. Colin was of opinion that

'the virulence of animal liquids is independent of their formed elements, leucocytes, globulines, red corpuscles, epithelial cells, and of all kinds whatsoever of nuclei or granules. It belongs to the liquid in mass; to the whole substances. To this conclusion he was led by his researches on *charbon*, septicæmia, vaccine, and glands. Returning to leucocytosis, M. Colin treated successively the following questions. Are there several forms of leucocytosis? What is the starting-point of these conditions? Is glanderous leucocytosis a special leucocytosis? He protested against the supremacy of micrographic theories in the domain of pathological facts. Since histologists have pointed out elements analogous to those of the lymphatic glands in the spleen, thymus, intestinal walls, etc., splenic, intestinal, and other forms of leucocythæmia have been created. And yet the physiological function of the spleen itself is as yet unknown. In the majority of cases of leucocythæmia the spleen is swollen, but is that an effect or a cause? It is not very probable that it should be a cause; for, 1. the veins of the liver do not contain more white corpuscles than the other branches of the portal vein; 2. the lymphatics springing from the spleen are not richer in leucocytes than the rest of the system; 3. extirpation of the spleen does not change the proportion between the red and white corpuscles. Besides this, the obstruction of an organ, far from augmenting, diminishes the secretion of them; as in the kidney, liver, etc. As to the glandular system of the intestine, it would result from M. Colin's experiments that they were secreting and not lymphatic organs; besides which, their number would not allow the production of leucocytosis. He equally denied the leucocytosis arising from a process effected by the marrow of the bones; the modifications undergone by the bony marrow in emaciated animals constituted a general fact in connexion with marasmus, which had nothing to do with leucocytosis. It was with other and better materials that the history of leucocytosis must be constructed.

February 1. M. Colin continued the reading of his memoir, and sought to establish that all the leukæmic conditions were of lymphatic origin, were of the same nature, and resulted from the temporary or prolonged preponderance of the formation over the destruction of leucocytes; that the symptoms of these leukæmic conditions resulted from disturbances produced in the circulation, hæmatisis, and nutrition, by leucocytes in excess; that in virulent diseases leucocytes were rather effects than a cause of the virulence; finally that, in contagious maladies, they had no specific character. In support of these propositions he cited experiments. He had produced fistulæ of the thoracic duct in cows and bulls, and had collected in four and twenty hours, from 15 to 95 kilogrammes of lymph; this enormous mass, rich in leucocytes, would suffice amply to bring on a leucocytosis, if leucocytes thus thrown into the blood were stable and not transitory elements. In opposition to the opinion of the Germans, leucocytes were found in the last lymphatic networks when the lymph had not passed through any lymphatic gland. Leucocytes were essentially unstable mobile elements, undergoing rapid modifications. While leucocytes were very active, emitting numerous prolongations in lymph, they were less so in blood, and these characters were still less in other media. In conclusion, M. Colin decided on the lymphatic origin of all the leukæmic conditions. All leucocytoses developed themselves

rapidly on account of the great mass of lymph elaborated and poured into the blood by the lymphatic organs. They did not necessarily require hypertrophy of the lymphatic glands. There was nothing to prove the splenic, intestinal, etc. origin of certain leucocytoses. Between the physiological and pathological leucocytoses, there was no difference of kind, but simply of degree and duration. The leucocytoses of the poison-diseases had no special characteristic; the poison was the cause, but did not give any special distinction. Leucocytoses were anæmic conditions, and resulted from a want of equilibrium between the production and the destruction of leucocytes. Obstructions of the spleen and liver by embolisms of the white corpuscles indicated the deposition of an excess of leucocytes in the organs rather than an increased formation of these elements in the points where they accumulated.

February 8. *Action of the Muscles in Dislocations.* M. Rigaud read a note on the function of the muscles in traumatic luxations. The conclusions were the following. The muscles never intervene directly to produce luxations. The consecutive displacements undergone by the luxated bones are produced by the action of the muscles. In the rational method of reduction by retrograde movement, they never do nor can oppose the replacement of the dislocated bones in their natural relations; on the contrary, they often aid it.

February 22. *Experiments on Animal Poisons.*—M. Chauveau forwarded a letter in answer to M. Colin's criticism on his experiments on virulent liquids. M. Chauveau maintained that whether the poisons were gradually and progressively diluted in an inert liquid, or the soluble parts of the solid particles were isolated, the same result was always obtained; the virulence was independent of the dissolved substances, and was related to the presence of suspended particles. The diffusion of albuminous liquids was effected when no membrane separated them. M. Chauveau had always seen that a layer of water of from 4 to 5 millimètres, placed in contact with vaccine lymph, speedily became albuminous, so as to coagulate by heat or nitric acid. Vaccine matter behaved like spermatic fluid submitted to gradual dilutions; neither the virulent property in the one, nor the fecundating property in the other, was impaired nor attenuated by dissolution, but simply dispersed here and there in the liquid mass. The corpuscular elements of glanderous pus, abundantly and repeatedly washed during forty hours and thus freed from any serosity which might serve as a vehicle, were as virulent as the entire pus. In the corpuscular elements, therefore, lay the activity of the virus. The meaning attached by M. Chauveau to his experiments did not go beyond this; he did not pretend to affirm anything in the essential nature of the virus. In conclusion, he claimed the priority of the discovery of leucocytosis in glands for MM. Christot and Kiener.—M. Colin recalled to mind that glanderous leucocytosis was pointed out twenty years ago by Delafond. As to M. Chauveau's diffusion experiments, they proved nothing; for he operated in capillary tubes in which capillarity necessarily intervened, and not diffusion alone. M. Colin operated with large tubes, and had never under these conditions been able to ascertain the diffusion of albuminous liquids; he had employed, in his experiments, vaccine lymph collected in sufficient quantity from numerous inoculations performed on bulls. As to washing, if the virulence belonged to

the corpuscles, all the washing waters as far as the tenth and upwards ought, according to M. Colin, to be virulent; since, according to him, they brought away a notable quantity of corpuscles.

Use of the Ophthalmoscope in Injuries of the Brain
M. Panas read a memoir on the study of circulatory disturbances visible by the ophthalmoscope in injuries of the brain, of which the conclusions were as follows. The papillary stasis (*Stauungs-papilla*) often shows itself after various injuries of the brain, as concussion, contusion, wounds, fractures of the skull, etc. It is not always accompanied by troubles of vision; therefore the fundus oculi should be examined in all persons who have received injuries of the head, whether there is or is not a lessening of their visual acuity. According to the necropsies which he had made, this stasis seemed to him to depend on the infiltration of the blood or serosity in the sheath of the optic nerve, and not on the cerebral lesion itself. The papillary stasis was not the indication of any special variety of cerebral injury, nor yet of its gravity; it only indicated the presence of a fluid effused into the meninges.

ACADEMY OF SCIENCES IN PARIS.

January 3. *Electric Currents*.—M. Chauveau continued his paper on unipolar excitation. He examined the physiological conditions which influence the character of the unipolar excitation of the nerves, during and after the passage of the current. He said: 'I have compared in four special cases, on a frog caught in the summer, the closing and opening contractions produced by unipolar excitation mediately performed with impolarisable electrodes. In the first observation the nervous system was absolutely intact; in the second, the spinal cord was separated from the encephalon; in the third, the nerve was cut above the application-point of the electrode. My studies on the mammalia have been up to the present limited to the mediate excitation of the facial nerve in the case of absolute integrity of the nervous system. The conclusions of these new researches are as follows. 1. Four types of contractions may be manifested during the passage of the current; *a*. Initial type, in which the effect of the current is only marked by a more or less instantaneous contraction, coinciding with the very moment of the completion of the circuit; *b*. Instantaneous continued type, in which an initial contraction more or less resembling the first type, is followed sooner or later by a generally irregular and imperfect tetanisation; *c*. Continuous decreasing type, or tetanisation, obtained instantaneously, then decreasing, sometimes slowly, sometimes with a certain suddenness; *d*. Permanent continued type with decided tetanus prolonging itself during the whole duration of the passage. 2. When the nervous system has not undergone any mutilation and does not present any further trace of the fatigue due to stimulation, the positive contractions produced by the passage of the current take on the initial type, with weak excitations, and the more or less permanent continued type, with very powerful excitations. The medium currents provoke contractions which belong to the intermediate types. It is with these last currents that the negative pole appears to have the greatest tendency to provoke tetanisation. 3. In these same physiological conditions of types, the contraction of opening shows a marked tendency to appear tardily. 4. A very re-

markable characteristic distinguishes the tracings taken in these thoroughly physiological conditions during the interruption period of the current. These tracings show that muscle then has a tendency to retain a more or less notable amount of the contraction which the passage of the current has imparted to it. 5. When the spinal cord has been separated from the encephalon, the phenomena of unipolar excitation resemble those of the preceding observation, except in one point; the persistence of the muscular contraction disappears almost entirely during the interruption period of the current. In the tracings, the fall of the curve of the contraction after the opening is more rapid, sometimes altogether sudden. This fall brings back the curve nearly to the axis of the abscissa. 6. If the spinal cord have been cut for a certain time, and the nerve be already fatigued, the contraction of the closing takes a clearly initial character, more or less instantaneous, even with strong positive excitations. Outside of the commencement of the opening and closing, the curve of the contractions is then a right line, losing itself in the axis of the abscissa, a right line on which the contraction of the closing and that of the opening, if it exist, appear under the form of more or less accentuated projections. 7. This last character manifests itself almost at once when the spinal cord has just been destroyed, but, in certain subjects, the tetanisation produced with strong currents by the application of the positive pole may be seen in this observation at the commencement during a very brief period. At this moment, the increase of the amount and of the duration of the positive contractions is observed when the current increases, almost as clearly as in the normal condition. Later on, the increase of the current becomes incapable of sensibly modifying the contractions. Positive or negative, strong or weak, these present all the same characteristics of amount or duration; except all the first, in which the superiority of the negative excitation is clearly retained. 8. Simple section of the nerve exercises a not less marked disturbing action of the same character as that of the crushing of the spinal cord, but the two actions differ in that the former, if the section of the nerves have been made before any preliminary application of currents, first temporarily gives rise to a remarkable inversion in the activity of the poles; it is with negative excitation alone that the contraction of opening is obtained, and this phenomenon coincides with the permanent preservation of the superiority of this negative excitation at the moment of closing. 9. In mammalia tetanisation is much more easily and promptly provoked than in the frog. It is, indeed, extremely well obtained by negative excitation by means of weak currents even with two small couples of Daniell's battery only, if electrodes of small resistance be employed. Rather stronger currents produce this tetanisation nearly equally in the case of negative or positive excitation. Finally, a sufficient increase of the current, by making tetanisation almost entirely disappear with the negative current, gives to that engendered by positive excitation a very remarkable character of permanent solidity. The tendency to the persistence of muscular contraction after the passage of the current, also exists among the mammalia, but in a much less marked degree than in the frog.'

January 10. *The Formation of Saccharine Matter in Animals*.—M. Claude Bernard communicated a paper on the formation of saccharine matter in ani-

mals. The author had long since demonstrated the presence of sugar in the normal condition in the blood; the glycogenic function of the liver under the control of the nervous system; finally, the almost diabetic condition of the fœtus. He had subsequently shown that the hepatic substance produced sugar not only by its action during life, but by chemical processes persisting after death.

January 17. *Formation of Sugar.*—M. Claude Bernard, in continuation of the subject, recalled to the mind of his hearers the experiment of the washed liver, which proved that sugar was formed in the liver, as in vegetation, at the expense of amylaceous matter. This experiment had induced Dr. Pavy to say that the presence of sugar in the liver is only a *post mortem* result. The presence of sugar in a great number of organs in the fœtus showed that the localisation of the glycogenic function only takes place after the complete development of the animal; but it could not thence be concluded that this function was general, since the glycogen was seen to accumulate in the liver of the fœtus in the same proportion as the sugar disappeared from the other organs.

The Cerebro-Spinal Nerve-Fibres.—A note by M. C. Sappey and M. Duval treated of the course of the nerve-cords which connect the brain with the spinal cord. Of the three columns which form the substance of the spinal cord, one is antero-internal, and separates the anterior median furrow from the anterior cornu. The antero-lateral column separates the anterior cornu from the posterior cornu. The posterior column goes from the posterior cornu to the posterior median sulcus. The antero-internal columns of the two sides interlace the whole length of the spinal cord, as far as the level of the medulla oblongata, which they pass through to become postero-posterior; they likewise pass through the cerebral peduncles and enter the optic thalamus. The antero-lateral columns only interlace after the antero-lateral columns; they go to form the deep layer or sensory portion of the pyramids; this sensory portion may be followed into the optic thalamus, where it accompanies the antero-internal fibres.

January 24. *A Case of Aphasia.*—M. Bouillaud communicated a case of aphasia arising from the loss of the co-ordinate movements necessary to the act of the pronunciation of words, without any lesion of the intellectual faculties. The patient had been suddenly attacked by paralysis of the right side and aphasia, and had retained his intelligence so that he comprehended all that was said before him, and all he read. He was able, after some days, to pronounce and write a few words.

REVIEWS.

The Anatomy of the Lymphatic System. Part II. The Lung. By E. Klein, M.D., Assistant-Professor at the Laboratory of the Brown Institution, London. Illustrated by 6 double plates of 27 Figures. 8vo. pp. 80. London: Smith, Elder & Co. 1875.

(Second and concluding notice.)

The second section of Dr. Klein's monograph is devoted to the pathological conditions of the pulmonary lymphatic system, which are dealt with under the three following subdivisions: 1. The changes in the pulmonary pleura in chronic diseases of the lung;

2. The relation of the lymphatics of the lung to the process of artificial tuberculosis in guinea-pigs; 3. The relation of this latter disease to acute miliary tuberculosis in man.

First, as regard the pleura pulmonum in inflammation: Just as in serous membranes—as has been stated by Dr. Klein in the first part of his monograph—the endothelium* here and there germinates, this action being much increased in inflammation, whether acute or chronic, so may similar sequelæ of inflammation be witnessed in the endothelium clothing the pulmonary pleura. The morbid action was set up by the injection of septic pus, or some similar morbid matter, by means of a Pravaz's syringe, or a capillary glass tube drawn out into a thin cannula, into the pleural cavity of the subject, be it rat, rabbit, or guinea-pig. In acute pleuritis of but short duration—24 to 72 hours—there is relatively little change in the endothelium of the pulmonary pleura. If, however, the animal be allowed to live beyond three days, groups of endothelial cells in the germinative condition, will be found arranged round a common centre in the shape of a hole, either empty or stopped by a plug. This centre is of the highest diagnostic importance, representing as it does a *stoma* through which absorption is going on; the fibrin of the pleuritic exudation being pumped into the stoma. Such change is of greater intensity if the pleuritis have become chronic, the germination of the endothelium round stomata being more distinct than in the acute condition of the disorder. The most typical specimens representing this change were obtained from the lungs of a guinea-pig, in which the injection into the pleural cavity of a minute quantity of septic matter from a tuberculous gland had produced artificial tuberculosis. Under such conditions, the costal and mediastinal pleura becomes in many cases, studded with numerous villous processes, covered by germinating endothelium, resembling similar papillæ found on the omentum and mesentery, as described in Part I. The pulmonary pleura, however, differs somewhat from the above, for, in artificial tuberculosis of long standing, the germination of the endothelial cells is spread over extensive areas, each cell being larger and more columnar, and its nucleus having undergone a double or treble subdivision. Nodular growths, too, standing in an intimate relation to the lymphatics, are frequently seen in the pulmonary pleura of the guinea-pig.

In the course of chronic pyæmia caused by the injection of septic matter into the pleural cavity, the pulmonary pleura of the guinea-pig in particular is seen to undergo three important inflammatory changes—*a.* a thickening of its matrix; *b.* hypertrophy of its muscular tissue; and *c.* certain changes in its lymphatics. These changes take place over areas corresponding to the nodular growths of the superficial parts of the lungs. The first named of these changes consists primarily of an infiltration with lymphoid cells, but later the matrix contains masses of bundles of fibrillar connective tissue, between which the lymph-canal system is well seen. The connective-tissue matrix of the pulmonary pleura has, in fact, simply become thickened, its structure having otherwise not undergone any marked change. We may, therefore, conclude that the increase of fibrillar connective tissue in the matrix stands in a genetic relation to the lymphoid bodies which, in the earlier

* In the former part of the review the word epithelium was used instead of endothelium, employed by the author.

stages infiltrate the pleura. The second change is perhaps, the most characteristic feature in the inflammatory process. The hypertrophy of the muscular coat of the pulmonary pleura consists in the approximation, by their thickening, of the bundles of unstriped muscles; and, as the morbid process advances, the muscular mesh-work already described (LONDON MEDICAL RECORD, vol. iv. p. 39, 1st column) may, by the abolition of the meshes over a large area, become transformed into an almost continuous membrane. The *rationale* of this hypertrophy is sufficiently obvious, for, as in other organs, so in the lung, obstacles to the carrying out of their normal functions, on assuming a chronic character, bring about a hypertrophy of the muscular tissue of the organ, if such tissue be essential to proper working. Since then the nodular growths just mentioned are great obstacles to the act of respiration, a compensatory hypertrophy of the pleural muscular coat is a sequel which we should naturally expect. There is, moreover, another reason for this process. In chronic pleuritis, artificially induced, the lymphatics of the pulmonary pleura, being charged with the products of inflammation, become less permeable, and the pleural muscular coat, materially adjunct to the free discharge of the lymphatics, undergoes, in compensation, hypertrophy. With regard to the third change brought about by the inflammatory process, whence originate the 'lymphoid cells' which frequently, in chronic pleuritis, completely plug up the subpleural lymphatic vessels of the lung in the guinea-pig? Some are doubtless due to the germination of the endothelium surrounding the stomata already described, while many are probably connected with the migration, the result of inflammation, of the blood-corpuscles, seeing that they are either pumped in from the exudation of the pleural cavity, or are absorbed from the very tissue of the pleura. If one of the nodular growths already mentioned be examined in a lung giving indications of advanced morbid changes, it will be seen to be made up of trabeculae and corresponding spaces. The trabeculae are probably the interalveolar rootlets of the subpleural lymphatics partly filled with lymphoid cells, and partly already in process of conversion into cords of adenoid tissue. Such adenoid cords formed within lymphatic vessels of the serous membranes have been described in the first part of Dr. Klein's monograph as 'endolymphangeal' follicular structures. The meshes between the trabecular plexus, which at a later stage are filled with bodies like lymphoid cells, are evidently the alveolar cavities. Similar nodular growths, which ultimately undergo caseation, are found abundantly on the superficial parts of the lung of guinea-pigs afflicted with artificial tuberculosis. Charcot and Debove have found that, subsequent to carcinoma of the breast, the lymphatics of the pulmonary pleura contained carcinomatous masses, which increase at the expense of the endothelium; and, according to Hillairet and Raynaud, there is to be found in connection with carcinoma ventriculi a general lymphangitis of the lungs and pleura.

The changes in the lung proper in artificial tuberculosis of guinea-pigs are next discussed. The researches of Dr. Burdon Sanderson and Dr. Wilson Fox have established the fact that the lung of guinea-pigs artificially inoculated with tubercle usually contains a new growth which is regarded as similar to miliary tubercle in man. After quoting

from the writings of these two observers, Dr. Klein passes on to his own investigations. Three kinds of granulation are found in the lung of a guinea-pig advanced in artificial tuberculosis; the one kind consisting of nodules more or less well defined in outline, being oval or spherical, which are also in connection with the wall of a bronchiole; the second comprising cord-like structures; while the third includes nodular structures of a conical or irregular shape. All these three kinds are of a peculiar semi-transparent appearance, the third kind only undergoing a cheesy transformation, indicated by an opacity in the centre. Two questions remain to be solved; viz., what is the structure and development of these bodies? and what is their relation to one another as regards the different stages of the morbid process?

1. The nodules found in connection with the bronchioles are analogous to the lymphatic follicles normally found in connection with the adventitia, which follicles are held by Dr. Klein, in accordance with the views of Dr. Wilson Fox and Dr. Burdon Sanderson, to become hyperplastic in artificial tuberculosis. Dr. Klein is not inclined to believe that these peribronchial follicles eventually undergo caseous degeneration.

2. The so-called 'cord-like' bodies, though easily confounded, on superficial inspection, with the nodular structures, are seen, on microscopical examination, always to bear a definite relation to a blood-vessel, surrounding it like a sheath; so that, when one of these is cut transversely, the blood-vessel in relation with it will also be seen in transverse section. The vessels with which these bodies are in such intimate relation are the minor branches of the pulmonary artery or vein, in the adventitia of which the new growth is situated, sometimes completely ensheathing the vessel, sometimes extending chiefly along one side of it. In advanced cases the perivascular cords extend as far as the point of junction of the pulmonary vessels with the bronchi, coming here into contact with the peribronchial granulations, with which they blend to some extent. All the perivascular cords agree in being composed of adenoid tissue, or one closely resembling this; but it is doubtful whether they, like the peribronchial lymph-follicles, possess a distinct system of blood-vessels. Next, as regards the development of the perivascular cords; the first step appears to be a distension of the perivascular lymphatics with plasma and lymph-corpuscles; then a reticulum of fibres makes its appearance, penetrating into the lumen of the lymphatic, and extending into the interalveolar tissue, thus converting the lymphatics into cords of adenoid tissue. Thus a structure is formed which was termed in the first part of this work 'endolymphangeal cord.' It is, moreover, probable that, as in the artificial tuberculosis of guinea-pigs, the lymphoid cells entangled in the fibrous meshes of the lymphatic cords are none other than migratory colourless blood-corpuscles, there being no evidence of their origin from the endothelial lining of the lymphatics. There may, however, be another method of origin of the perivascular lymphatic tissue, viz. by the formation of a 'perilymphangeal tissue,' by the extension into a collection of lymph-corpuscles, lying outside of a perivascular lymphatic vessel, of the fibres which are in close relation with the endothelium of that lymphatic. The mode in which a perivascular cord becomes developed, can, it will be readily seen, only be determined in the earlier stages of an artificial

tuberculosis. Concurrently with the changes to which the development of perivascular adenoid tissue is due, there takes place a germination of the endothelium of the ultimate branches of the pulmonary artery, which may go to such an extent that only a very narrow canal, just sufficient for the passage of a red blood-corpuscle, may remain of the lumen of the vessel, there being a considerable dilatation just above the point of stenosis. There is also very good reason to suppose that the coats of the pulmonary vessels are affected by the invasion of the perivascular cords in close contact with them; the capillaries even may not be exempt from change, being in some instances converted into solid nucleated threads.

3. The semi-transparent 'granulations,' of a more or less conical shape, and abundant in the superficial parts of the lung, are due, as Dr. Burdon Sanderson has described, to catarrhal pneumonia. In structure they are made up of trabeculae, representing the thickened alveolar septa, and in direct connection with the perivascular cords; and spaces filled with products of the alveolar epithelium. The epithelial lining of the alveolar cavities is of three kinds; *a.* granular and somewhat enlarged epithelial cells, including at most two nuclei; *b.* epithelial cells considerably enlarged, and containing several nuclei; and *c.* large masses of granular protoplasm, containing numerous nuclei, or, in other words, giant-cells, each of which is probably made up by the fusion of several epithelial cells. As might be expected from the compression and degeneration of the blood-vessels, the products of the catarrhal process finally undergo necrosis, *e.g.* caseation.

The last chapter of Dr. Klein's monograph is devoted to acute miliary tuberculosis in man. The author dissents from the assertion of Buhl (*Lungen-entzündung, Tuberculose, und Schwindsucht*, München, 1872) that, in all cases of acute miliary tuberculosis, the miliary tubercles are due to desquamative (*i.e.* lobular catarrhal) pneumonia. In the lungs of five true cases of acute miliary tuberculosis in children, Dr. Klein found the tubercular nodules to represent a number of alveoli distended by fibrinous material, including granules and small cellular elements; also that the trabeculae, *i.e.* the inter-alveolar tissue of the peripheral part of the tubercle, were slightly thickened, and contained lymphoid cells. The retiform tissue, in which a giant-cell may be imbedded, is not, according to Dr. Klein, as asserted by Buhl and Wagner, true adenoid tissue, but is either a network of elongated 'clumsy-looking' cells, or a network of fibrillar substance. With regard to the giant-cells themselves, Dr. Klein holds that not only such bodies in general, but those of tubercles in particular, have different modes of origin in different organs; and that, with regard to those under the latter category, there are only two alternatives of possible origin—from lymphoid corpuscles, *i.e.* colourless blood-corpuscles, supported by the observations of Ziegler, or from epithelial cells lining the alveolar cavities. The second is most commendable to Dr. Klein, since, among other cogent reasons, all intermediate forms may be found between well-developed giant-cells and nucleated cells of an undoubted epithelial character. That the giant-cells of tubercle of the lung are true cells, and that they may be isolated by teasing, Dr. Klein has repeatedly satisfied himself, being thus at one with Friedländer; and consequently he cannot accept Hering's view, that such bodies correspond merely to

a granular substance filling up the lumen of a lymphatic vessel, and that their nuclei are identical with the endothelial cells of that vessel.

As it would be presumptuous in any but a skilled worker with the microscope to criticise the correctness of Dr. Klein's observations, scarce anything remains to the reviewer save the literary style of the work. Now, since there is no room for elegance of diction in a bare description of microscopic minutiae, unrelieved by polemics flavoured with strong scientific odium or by theoretic flights of fancy, it is not unreasonable to expect, as a slighter substitute, some attempt at clearness and accuracy of description. But though, unfortunately, in Dr. Klein's monograph there are here and there passages which sorely try the patience of a reader who is doing his best to get at their meaning, great allowance ought to be made for the fact that the author has clothed his thoughts and observations in a tongue other than his own, and one which, only too frequently, is not without its difficulties even to a native. Having given utterance to this seemingly ungrateful and ungracious remark, it is a real pleasure to be able to praise without reserve the excellent and copious illustrations of the monograph, due, not only to the dexterous scalpel, but also the facile pencil of its author. To those who, with the reviewer, have almost despaired of seeing such work executed in this country, there will appear a faint gleam of hope, after seeing the plates, but little inferior to those just mentioned, which illustrate the same author's paper in the current number of the *Philosophical Transactions* of the Royal Society.

J. C. GALTON.

The Successful Treatment of Internal Aneurism, by Consolidation of the Contents of the Sac, Illustrated by Cases in Hospital and Private Practice. By JOLIFFE TUFNELL, President of the Royal College of Surgeons in Ireland, etc. Second Edition, pp. 71. Dublin: Fannin & Co. 1875.

The profession will welcome the reappearance of Mr. Tufnell's valuable and important treatise, comprising the contents of the first edition (of 1864), with additional confirmatory cases which were published in a paper on the subject in the fifty-seventh volume of the *Medico-Chirurgical Transactions*. A diligent comparison of the two editions would also discover a few additional observations on the details of diagnosis and treatment, but they are so few, and comparatively so unimportant, that the present edition may be regarded practically as a re-issue of the former, with five additional cases to prove the possibility of curing aneurism of the large arteries in the chest and abdomen in this manner. The subject is so very important, and the objects and method of Mr. Tufnell's treatment are still, after all that has been said about them, so imperfectly understood, that we shall make no apology for bestowing a longer notice on this little work than its mere size would at first sight seem to require. Mr. Tufnell justly says that his matter might easily have been expanded into a large volume. Busy practitioners will certainly not complain of a brevity which, while it saves their time, leaves nothing unsaid which the topic requires.

We will treat the subjects of Mr. Tufnell's treatise in the order we have indicated. First, what evidence does Mr. Tufnell produce that it is possible to cure aneurism of the aorta and its large branches in the

chest and abdomen by position and restricted diet? Second, what are the objects of his method? And, lastly, in what manner does he propose to secure them?

The number of cases which Mr. Tufnell brings forward to prove the possibility of cure by his method are eleven. They are as follows. 1. A case of aneurism of the abdominal aorta, as large as an orange, was cured in three months by rest and restricted diet; the patient, a carman, aged thirty-five, living and plying his trade for over four and a half years, when he was killed accidentally. As we wish to look at Mr. Tufnell's cases as critically as possible, we will add that, though it is evident that the symptoms in this case were so far mastered as to enable the patient 'to do all his work, with the exception of lifting a bucket full of water, which he found great difficulty in effecting, from inability to straighten his back,' there is no evidence that the aneurism was entirely consolidated. Mr. Tufnell says that at an early period of the treatment 'the tumour became partially solid, so that when grasped it imparted to the hand the idea of considerable density'; but he strangely omits all description of the final condition of the tumour. 2. The second case, (p. 11), is one which is less convincing, since neither are the grounds of diagnosis very fully stated, nor is there any absolute evidence of consolidation. The disease was believed to have been aneurism of the thoracic aorta (descending if we rightly understand), and the patient lost all symptoms after ten weeks' treatment, and resumed the duties of an ordinary seaman, but nothing further is known of him. The third case, (p. 12) is one of far greater value and importance. Here there could be no question of the existence of a very large aneurism of the arch of the aorta which had eroded the sternum and ribs, in a man aged fifty-four. All the symptoms, including the pulsation, subsided, and the large mass remained consolidated and pulseless, while the cutaneous veins of the abdomen enlarged and communicated with those running to the superior cava, showing the interruption of the deep circulation in the thorax. This man was seen, and a portrait of him is given, three years after the consolidation of the tumour, in Mr. Tufnell's first edition. We learn from that edition that the treatment commenced in 1854, and from the author's silence on the subject we infer that the man is still alive, and, if so, is seventy-six years of age. The *post mortem* examination of this man's thorax is almost a matter of public interest, and it would be a most regrettable circumstance if he has died in the interval and the opportunity has been lost. The fourth case (p. 16) is a well marked case of aneurism of the abdominal aorta, in which great improvement in the symptoms and some amount of consolidation of the tumour no doubt ensued, but where there is no evidence of absolute cure. The fifth case (p. 19) is one of striking interest and importance. It was also a case of abdominal aneurism. As the patient ultimately died from rupture of the aneurism, it is quite clear that a cure was not obtained; yet if it be not a paradox to say so, the case is almost more favourable to the treatment than one of complete cure would have been. The patient, believing Mr. Tufnell's diagnosis, at first followed his treatment with the effect of losing his symptoms and obtaining a very great amount of coagulation in the tumour. Then, unluckily for himself, he took the advice of other surgeons, who told him that he had never had aneurism and might indulge in violent exercise, and the consequence of following

that advice was fatal. The sixth case (p. 23) is also that of an aneurism of the abdominal aorta or of the *coeliac* axis, in which the treatment produced great amelioration and possibly a 'practical' cure, though some pulsation and a faint bruit still remained. All these cases were related in Mr. Tufnell's edition of 1864. The seventh case (p. 26) was one in which the patient had aneurism of the right common and left internal iliac arteries. He was lying in bed dying of dropsy, and after death it was found that the aneurism of the internal iliac was absolutely cured and partially absorbed, while that of the common iliac was in process of consolidation. The specimen is figured, and was exhibited to the College of Surgeons by the present reviewer in illustration of a course of lectures on Aneurism; but as the aneurisms do not seem to have been diagnosed before death, and as the patient's dying condition precluded the possibility of any treatment, the case bears only indirectly on Mr. Tufnell's subject. The eighth case, however (p. 27), is one of the greatest possible importance. Here an abdominal aneurism was completely consolidated under Mr. Tufnell's care and by the methodical employment of his plan of treatment, and the death of the patient shortly afterwards, from disease of the kidneys, enables the author to present in the frontispiece a faithful representation of an aneurism of the abdominal aorta, springing from that artery just below the *coeliac* axis, completely consolidated and filled with laminated fibrin, and in its cured condition larger than the closed fist. It is interesting also to note that all the branches of the aorta remained pervious. If this case had stood alone, the efficacy of Mr. Tufnell's method in curing internal aneurism might be said to be satisfactorily established by it. The ninth case, however, on p. 34, is hardly less convincing. It is that of an aneurism of the abdominal aorta in a patient of Dr. Carte, aged seventy-nine years, where the symptoms were relieved and the aneurism cured by three weeks of treatment—the man dying of old age more than three years afterwards, when *post mortem* examination allowed Dr. Carte to obtain the specimen, showing the definite anatomical proof of complete cure, the sac being wholly obliterated by laminated fibrine. The interest of this case is increased, if that be possible, by contrast with another subsequently under Dr. Carte's care, in which the symptoms were very similar, and the result might have been the same, but the man had not the patience to submit to the confinement, persisted in walking about, and died from the rupture of the sac in two months. The tenth case (p. 36) is one of aneurism of the thoracic aorta, where much relief was obtained from the treatment, but the patient returned to severe labour, and the aneurism burst. The eleventh case (p. 38) is one of popliteal aneurism (under the care of Dr. Muschamp) which underwent a cure under the employment of rest and restricted diet; but here, as the leg was 'raised upon a pillow and slightly bent,' the case approaches rather to those of cure by voluntary flexion which the present writer has published, and to which he alluded in a lecture delivered (June 19, 1874) at the College of Surgeons, in which he endeavoured to show that the cure by flexion does not necessarily involve any irksome confinement, but that, in simple cases of popliteal aneurism, a cure can be obtained by the patient merely keeping the limb in the bent position to as great a degree as is comfortable to himself, and allowing himself a relaxation of the posture when he finds it necessary.

Such is Mr. Tufnell's evidence, and we think that the following would be a fair summary of it, looking at it from the most critical point of view possible. The third case shows the possibility of complete cure in thoracic aneurism, the pulsation being certainly obliterated, and the sac, we can hardly doubt, completely consolidated. At the same time, it would increase the importance and interest of the case if an anatomical examination could be procured. The tenth case is also a valuable instance of the great amelioration and possibly the practical cure which may be obtained in thoracic aneurism, meaning by a practical cure, a sufficient consolidation to allow of the circulation going on through the aneurism as through the original artery, without any tendency to further increase. The second case would point in the same direction if the diagnosis were established. These are all the cases of thoracic aneurism. Of the seven cases of abdominal aneurism, two (Nos. 8 and 9), were completely consolidated, and the preparations are still in existence to show the reality of the cure. In Nos. 1 and 6 a practical cure seems to have resulted. In No. 5 the disease was nearly cured, and with ordinary prudence it seems likely that the patient would have completely recovered; and in No. 4 the symptoms were certainly relieved. The remaining case, No. 7, is rather an illustration than a case absolutely in point. If this is a correct statement of the evidence, it certainly must be admitted to afford a proof of the possibility of absolute cure, and of the probability of practical cure, in all aneurisms, even those situated close to the heart. And we can assure our readers, from a considerable personal experience of the method, that they will hardly ever be disappointed in the expectation of relieving the distressing symptoms of thoracic aneurism in this way, and that the relief will be the more complete, the more accurately the patient can be persuaded to submit to the treatment in all its rigor. It hardly needs to be added that, if this is the case with aneurism springing from the immediate neighbourhood of the heart, the prospect both of cure and of relief is greater in those situated further down.

We now pass on to the next topic. What is the object of Mr. Tufnell's treatment? It is usually represented as being the *diminution* of the circulation; and so to a certain extent it is, but equally or even more important is the *equalisation* of the circulation, *i.e.*, to keep the pulse for many weeks or months at a perfectly equable rate and volume. It may be very fairly questioned whether it is desirable, nay rather whether it is not injurious, to diminish the patient's powers and weaken his circulation too much. It is a common and a very probable opinion that the deposition of fibrin in the sac goes on better when the patient's blood is moderately rich and his vessels moderately full. But this is under the supposition that the circulation is in both cases equable. No one can doubt that frequent changes from extreme feebleness to the irritable reaction which necessarily follows it must be injurious, looking only to its effects on the tension of the sac. Nor can it reasonably be doubted that impaired nutrition must be very deleterious to the tissues which form the sac.* In every point of view, in fact, the treatment

which goes by the name of Valsalva appears to be theoretically unadvisable, and it certainly is entirely different from that which Mr. Tufnell proposes. We would refer to page 61 of this treatise for a clear and perfectly convincing demonstration of the absolute incompatibility in principle between the two methods.

Mr. Tufnell, on the contrary, endeavours to reduce the circulation slightly below the normal standard of frequency by complete and protracted recumbency. In order to ensure that the patient does not move from the horizontal position, his bed should be made completely comfortable, by attention to many minute details which are here faithfully set out; and, in order to avoid any straining from constipation, or any disturbance from diarrhoea, the state of the bowels must be carefully regulated, so as to procure a soft easy motion about every other day. Wakefulness or irritability must be soothed at first with chloral or morphia, very carefully administered, and the diet is to be restricted to about ten ounces of nutritious solids and eight ounces of fluid in the twenty-four hours, the fluid comprising, if necessary, a little wine. The patient ought in every case to be prepared for a period of total rest of not less than three months. In some favourable cases a shorter time may suffice, but it is far more probable that the surgeon will have to make a call on his fortitude for a longer period of endurance, and it is useless to deny that the ordeal is a severe one at first, and especially to persons accustomed to an active life, and destitute of mental resources. The deprivation of food, and even more so that of drink, is at first severely felt, and the minimum must usually be reached gradually. But to most people the confinement is even more trying. Still the majority can be induced to give a fair trial to the method, and the present writer feels himself justified in asserting broadly that, with the exception of a few hopeless cases, where death was already imminent, and the patient sank rapidly, he never saw one in which the treatment was not followed by very great improvement; and two cases, at any rate, of aortic aneurism are now under his observation, in neither of which would the patient have been expected to live a month when first seen, and which are now alive and improving, in one two years, and in the other more than one year, after the commencement of treatment. In both these instances it is his conviction that life was preserved solely by the prolonged use of Mr. Tufnell's method. That a complete or anatomical cure of aneurism of the arch of the aorta should often occur seems very improbable, but it is his deliberate conviction that the sac might be comparatively often so far filled with fibrine as to produce what is called above a 'practical' cure, if the treatment by rest and restricted diet were used more methodically and with an intelligent perception of the necessity for attention to the numerous details which Mr. Tufnell here describes.

In conclusion we may say a word or two on the comparison between Mr. Tufnell's and other methods of treatment. While fully sensible of the advantages which in some cases follow the employment of galvano-puncture in aortic aneurism, personal experience,

* We hope we shall not be considered tedious if we again repeat what we have often said before, as to the very small part which the sac plays in the ordinary descriptions of aneurismal tumours. Most writers speak only of the behaviour of the contents of the sac—writing about aneurisms as if they were bladders of dead tissue filled with blood—which will

break if the pressure on them is too great, but which have no vital actions of their own. It is, on the contrary, our conviction that the rupture of an aneurism is more often the consequence of such vital action in the sac than of mere pressure. It is obvious, if this is so, that starvation by its injurious influence on the nutrition of the sac must much increase the risk of rupture.

as well as the study of the writings of Signor Ciniselli the great authority on this subject, has deeply impressed the writer with a conviction of its uncertainty and its danger. Much more may this be said of the introduction of foreign bodies into the sac. The method of Mr. Tufnell, on the other hand, is free from all danger of its own. The only risk connected with it is the risk that the disease may still make progress, and a week or two's observation will settle this point. It is only in those cases of thoracic aneurism in which the disease is advancing under Mr. Tufnell's treatment, or where that treatment has been fully tried and failed, that the propriety of more active interference should even be discussed. We are also disposed to say the same (though of course with much more hesitation) of those cases of abdominal aneurism in which compression of the aorta under anæsthesia is possible, and certainly when the disease extends high up. In spite of the splendid success obtained in Dr. Murray's and other cases, we now know that the proceeding involves very great immediate risk, partly from the protracted administration of the anæsthetic, partly from the risk of contusing the viscera or the aneurismal tumour, and may of course fail after all. Mr. Tufnell's method involves no such risk, hardly ever fails at any rate to diminish the volume of the aneurismal tumour, renders the patient no less able to support the compression afterwards, if it be found necessary, and will, we believe, often supersede the necessity for the employment of more dangerous measures. We congratulate Mr. Tufnell on the extended appreciation which his method has already secured, and we believe it would be a source of legitimate congratulation to the public if that appreciation should become so universal as to render it the rule of practice to adopt this method of treatment in all cases of aneurism in the chest and the great majority of those in the abdomen.

T. HOLMES.

On Stethometry. Being an Account of a New and more exact Method of Measuring and Examining the Chest, with some of its Results in Physiology and Practical Medicine. By ARTHUR RANSOME, M.D., M.A. (Cantab.). London: Macmillan and Co. 1876.

The author of this work has entered upon a field which in Britain is almost unoccupied, namely, the application to the study of diseases of the chest of the graphic method, and other instrumental means of exact measurement. There is one important respect in which the respiratory movements offer much greater facility for registration than those of the heart or pulse. For, owing to the comparative slowness and magnitude of the motions, and the greater force by which they are produced, it is needless to give to the recording instrument either the lightness and delicacy, or the amplifying power which is necessary in the sphygmograph or cardiograph. Thus there is no danger of any error being introduced in consequence of the acquired velocity of a lever, or the oscillations of a spring. On the other hand, the movement of the chest is not one of simple expansion, but is made up of components in three directions, the separate recording of which presents considerable mechanical difficulty. Thus other observers have contented themselves with representing some one element of the motion; Marey having chosen the variation of the circumference, Burdon

Sanderson that of a single diameter, and Riegel the forward movement of the front of the chest. Dr. Ransome has been the first to invent an instrument, the three-plane stethometer, by which the extent of the motions of any point in three directions, upward, forward, and outward is simultaneously registered. The patient sits upright in a chair, while the instrument is placed on a table before him, and the pad of its lever is so adjusted to a rib, or to any other part, that it readily follows its every movement.

The author has also devised another instrument, the stethograph, by which not merely is the extent of motion registered, but the actual path of each point is graphically described. For this purpose the outward motion, which is comparatively small and unimportant, is eliminated, and the curve described is that made up of the combined forward and upward movement in a single complete inspiration and expiration. Thus in both instruments the record applies to a single cycle only of respiratory action, and in the stethograph the motion is not magnified, but depicted in its actual extent. It is scarcely applicable therefore to the very slight motion which takes place in natural breathing, and all the examples in the work are taken from forced respiration. The three-plane stethometer may be converted into a stethograph by adapting the motions of its three dials to drums, by which the movement is conveyed to the levers of a revolving cylinder. Dr. Ransome gives four examples of tracings thus obtained, but all the rest of the material upon which his work is based was obtained by means of the simpler instruments. In its original form the three-plane stethometer is admirable in its simplicity and accuracy; but converted into a stethograph it would become somewhat complex and costly. Hence, for obtaining the curves of a series of respirations, natural or forced, the stethograph of Dr. Burdon Sanderson, or the still simpler instrument of Riegel, by which simultaneous tracings of two points on the chest may be taken, would seem to be more convenient. The only criticism which we have to offer on the results of Dr. Ransome's observations is, that he has limited them to forced respiration, and has not given the comparative effects of natural breathing, which might have been obtained by means of the three-plane stethograph.

The author has devoted considerable attention to the evidence to be derived from his instruments with regard to the physiology of respiration. He finds that the curves described are not to be accounted for by supposing that the ribs simply move upon their articulations. For, if the inclination of a rib and its chord-length be known, the relative amount of forward and upward movement produced by such an action can at once be calculated. Dr. Ransome determines the inclination of the rib by means of a special goniometer invented by himself, and finds that the amount of forward movement is far greater than can be thus explained. There must, therefore, be a diminution of the curvature of the ribs in inspiration, and consequent increase of their chord-length. This he considers to be chiefly due to the release of the elastic ribs from a strain placed upon them in expiration, but partly also to some effect of muscular action or tonicity during inspiration. It is the forward movement which is chiefly diminished when there is any disease of the lung beneath, especially when it is at all acute in character. Thus is shown an effort of nature to afford local rest by the suspension of muscular action, and an indication is

afforded for carrying out the same object by means of artificial supports.

Numerous examples are given of the practical use of the stethometer in disease. In emphysema and bronchitis the impairment of motion is very great, and its degree is here an exact measure of the extent of the disease. In the later stage of pleurisy, valuable information is obtained as to the extent of mischief done, and the progress towards recovery or otherwise. But it is in phthisis that the most valuable application of the stethometer is found. Not only does it afford a means of numerically recording the amount of disease present, and so registering its rate of progress; but in some instances it is found to show signs of commencing mischief when it cannot be detected in any other way. The author considers that it will also prove very valuable in prognosis; for he finds that the stage of disease being the same, there is much more impairment of motion in acute than in chronic cases. It will be seen that a wide field of research is thus indicated for other observers to assist in exploring.

NEW INVENTIONS.

MAGNESILYNE.

This new preparation, manufactured by Messrs. Benmond & Co., of Leamington, is intended to take the place of citrate of magnesia, a compound which recent investigations have tended to bring into disrepute, from the proved nature of its constituents, as commercially manufactured and sold. Messrs. Benmond guarantee their magnesilyne to contain 60 per cent. of ordinary crystallized citrate of magnesium, in combination with citric acid, bicarbonate of sodium and sugar. It is perfectly soluble and effervescent, and will be found an useful and agreeable form for administration in cases where a mild aperient saline is demanded.

THE UNIVERSAL DISINFECTING POWDER.

This new disinfecting powder meets a great public want. It is cheap, highly effective, and free from the danger of producing accidental poisoning to which other well-known disinfectants give rise with such lamentable frequency. It is perfectly soluble, colourless, and free from odour. These are qualities to make it valuable for daily and popular use. It is manufactured by Messrs. Ledger and Co., Lant Street, Southwark. It has been found very effective by many medical officers of health who have practically tested it, and has been favourably reported on by Mr. Wanklyn and Mr. Bartlett, two of our most eminent experts in the chemistry of disinfection, and will now no doubt find its way into popular use in towns and rural districts, and in ships, hospitals, slaughter-houses, stables, etc.

RECENT FRENCH BOOKS.

Published by V. A. Delahaye et Cie.

Archives de Tocologie, des maladies des femmes et des enfants nouveau-nés; par J.-H. Depaul; Secrétaire de la rédaction: de Soyre. Le numéro de mars vient de paraître. Un an: 18 fr., départements, 20 fr.

D'un phénomène stéthoscopique propre à certaines formes d'hypertrophie simple du cœur; par Th. Exchaquet. In-8 de 93 p. Prix: 2 fr.

Contribution à la pratique des accouchements, étude théorique et pratique sur une espèce peu connue de version pelvienne par manœuvres internes sans extraction, qu'on pourrait appeler la version simple; par V. G. Hotténier. In-8.

Leçons cliniques sur les fractures de la jambe; par A. Richet. In-8 de 63 p. Prix: 2 fr. 50 c.

De l'obésité; par L.-S. Worthington. In-8 de 188 p. Prix: 3 fr. 50 c.

Anales de la Sociedad anatomica española. Directeur: docteur Eligio Callejas y Garriga. Madrid.

Quelques mots à propos de la préparation du phosphure de zinc, et de son emploi en thérapeutique; par P. Vigier. In-8, de 16 p.

Du somnambulisme provoqué; par Ch. Richet. In-8, 1875.

Essai sur les doses toxiques et les contre-poisons de quelques composés arsenicaux; par R. Rouyer. Thèse de doctorat, Nancy, 1875.

Published by G. Masson.

Traité des tumeurs bénignes du sein; par le docteur Léon Labbé, chirurgien de l'hôpital de la Pitié et le docteur Paul Coyne. 1 vol. in-8. Prix: 12 fr.

Leçons de pathologie générale: Les grands processus morbides; par J.-J. Picot, professeur suppléant à l'Ecole-de-Médecine de Tours. T. 1, et t. 2 fascicule 1, avec figures dans le texte. Prix: 20 fr. L'ouvrage complet (deux volumes) coûtera 30 fr.

Traité de médecine de A. C. Celse; Traduction nouvelle avec texte latin, notes, commentaires, figures dans le texte et 14 planches contenant 110 figures d'instruments de chirurgie antique; par le docteur A. Védrières. 1 vol. in-8. Prix: 16 fr.

Le système séreux, anatomie et physiologie; par le docteur L.-H. Farabeuf, professeur de la Faculté, avec planches en lithographie, in-8 de 120 p. Prix: 3 fr.

Published by Germer-Baillière.

Recherches expérimentales sur la digestion des insectes et en particulier de la blatte; par Jousset de Bellesme. In-8, de 87 p.

Etude nouvelles sur les eaux de Cauterets et en particulier sur l'eau de Mauhourah; par H. Byasson et L. Byasson. In-8, de 54 p. Prix: 25 fr.

Annuaire de thérapeutique, de matière médicale de pharmacie et de toxicologie pour 1876; par M. le professeur A. Bouchardat. 36e année, 1 vol. in-18. Prix: 1 fr. 50.

Dictionnaire annuel des progrès, des sciences et institutions médicales, suite et complément de tous les dictionnaires; par M. le docteur P. Garnier. 11e année 1875, 1 vol. in-18. Prix: 7 fr.

Published by P. Asselin.

Traité d'anatomie topographique avec applications à la chirurgie; par P. Tillaux. Le deuxième fascicule, contenant colonne vertébrale, cou, membres supérieurs et thorax, vient de paraître. 306 p., gr. in-8, avec 73 figures tirées en noir et en couleur. Prix: 7 fr.

Published by F. Savy.

Les mamelles et leurs anomalies étudiées au point de vue de l'anatomie, de la physiologie, et de l'embryogénie; par A. Puech. Grand in-8vo de 120 p. Prix: 3 fr.

MISCELLANY.

THE SWISS LAKE-DWELLERS.—A Zürich paper reports a discovery which throws light on the hitherto obscure question as to how the lake-dwellers disposed of their dead. Between Auvernier and Colombier, in the vicinity of two lake-dwellings—one of stone, the other of the bronze age—house-building excavations have brought to light a chamber supported by upright stones, and containing ten or fifteen skeletons, the skulls collected in one corner, the other remains in the centre. Near them were found a bear's tooth, a wolf's tooth, half a boar's tooth, a small smooth bone-disc, two hatchets of serpentine stone, a bronze needle (all these bored through) a small copper ring, and four small bronze child's bracelets. It is supposed to be a family grave of a date transitional between the stone and the bronze ages.

AWARDS.—Professor Huxley was awarded the Woolaston Medal at the anniversary meeting of the Geological Society in recognition of his services to geological science. At the same time the Murchison Medal was awarded to Professor Selwyn, and the Sir Charles Lyell Medal to Professor Morris.

MEDICAL CERTIFICATES.—A criminal condemned to the guillotine had an attack of fever, and was in bed when the executioner made his appearance. The sick man exclaimed that he wished to see the doctor. 'The doctor! No, it is the chaplain you mean.' 'No, no; I mean the doctor. I want him to certify that my state of health will not allow me to undergo the operation.'

BLOOD-LETTING IN MEXICO.—According to Mr. H. H. Bancroft ('The Native Races of the Pacific States of North America') the doctors of a Mexican tribe perform venesection in a very original way. The patient stands upright and naked before the operator, who sticks him with arrows until the point of one of them has opened a vein.

DISEASES OF MODERN LIFE.—Dr. B. W. Richardson, in his recent courses of lectures on the diseases of civilisation, speaks of a new form of poisoning which has within the last two years manifested itself amongst the men employed in the refining of crude paraffine. It generally appeared, in its first stage, as an eruption of bright red pimples upon the exposed portions of the workmen's skin, and it was purely an affection of the hair-follicles, caused by the inflammatory properties of the crude paraffine oil when it penetrated the skin.

THE IDENTIFICATION OF BODIES.—An important and highly praiseworthy improvement is about to be introduced at the Morgue. In future the corpses taken thither are not to be exhibited in a state of nudity, but in their 'habit as they lived.' As people are not in the habit of seeing even their nearest relatives in a state of nature, friends will have less trouble than heretofore in recognising and identifying the bodies when they are clothed; and the new regulation will do away with the dealing in articles of apparel which has already brought several warders of the Morgue before the Police Correctionnelle.

THE TRANSFUSION OF BLOOD.—The following extract, bearing on this subject, will be found in 'Pepys' Diary' (Nov. 14, 1666), p. 339 of Warne's edition. 'Dr. Croone told me that at the meeting at Gresham College to-night (which, it seems, they have now every Wednesday again) there was a pretty experiment of the blood of one dog let out (till he died) into the body of another on one side, while all his own ran out on the other side. The first died upon the place, and the other very well and likely to do well. This did give occasion to many pretty wishes, as of the blood of a Quaker to be let into an Archbishop, and such like; but, as Dr. Croone says, may, if it takes, be of mighty use to man's health, for the amending of bad blood by borrowing from a better body.'

COST OF LUNATICS IN ASYLUMS.—The Commissioners in Lunacy have taken the average cost of maintaining the insane in county and lunatic asylums during the year 1874. These institutions are found in all parts of the kingdom: varieties of cost, due to the difference of local markets, are of course eliminated by the average. The articles consumed and the services required were supplied to more than 32,000 persons—the patients of fifty-four county and borough asylums. The average weekly cost in the county asylums, numbering in all forty-seven separate establishments, was 9s. 11½d. per patient; the average weekly cost in seven borough asylums was 11s. 8d., or rather more than 1s. 8d. per head in excess of the county charge. Taking the extremes in county asylums, it is found that at Dorset the cost is 8s. 2d., or 1s. 9½d. below the average; at Northumberland it is 12s. 1½d., or 2s. 1½d. above the average. In the boroughs the extremes are still wider; Birmingham expended at the rate of 8s. 6d. per patient, while the City of London paid 15s. 0½d.

A SHOWER OF WORMS.—The *Morgenblad* of Christiania states that after a recent violent storm a number of worms were found crawling on the snow, and it was impossible to find the places from which they had issued, everything being frozen in the vicinity. Similar circumstances were reported from several places in Norway.

RAREFACTION OF THE AIR.—M. Paul Bert has offered a prize for the best means of protecting the lives of aeronauts and mountain-climbers in circumstances where cold and rarefaction of the air become dangerous. The prize offered by M. Bert is a 20l. gold medal, and the competition is open up to December 31, 1876.

THE MEDICAL SOCIETY OF LONDON.—The 103rd anniversary meeting of this society was held on Wednesday last, when Mr. William Adams, F.R.C.S., of Henrietta street, Cavendish square, was chosen president for the ensuing year. The silver medal in the gift of the society for the best paper of the year was awarded to Dr. T. Lauder Brunton, F.R.S., of St. Bartholomew's Hospital.

ENGLISH MEMBERS OF THE INSTITUTE OF FRANCE.—According to the *Annuaire* for 1876, there appear to be five English Academicians and twenty-nine English correspondents of the Institute of France. As Academicians in Science are Professor Owen and Sir G. B. Airy; as correspondents in the Class of Science are Professors Sylvester and Adams (Cambridge), Sir T. Maclear, Rear-Admiral Richards, General Sabine, Dr. J. P. Joule (Manchester), Dr. E. Frankland, Professor A. W. Williamson, Professor W. H. Miller (Cambridge), Dr. Hooker (Kew), Dr. W. B. Carpenter, Dr. Huggins, and Mr. Lockyer.

PROFESSOR HUXLEY ON EVOLUTION.—In a lecture delivered in the City Hall, Glasgow, on the 17th ult., on the subject of 'Teleology and Morphology, as Illustrated by the Hand,' Professor Huxley described teleology as the argument from design, and morphology as the science which had to do with what was called the unity of the organisations of animals, as the result of their gradual modification. Illustrating his remarks by the human hand, he stated at length that in a certain sense, with certain limitations, the teleological argument was a valid one, though, as far as he was concerned, he did not ascribe to it the same vitality as some persons might do. As a matter of fact, he contended that the animal creation was evolved, not constructed in the way the teleological argument was stated by Paley; but, notwithstanding, he held that the two lines of argument were not inconsistent the one with the other, and that a man might be a teleologist, but at same time hold all the doctrines of morphology.

A NEW GAS BURNER FOR LABORATORIES.—The low pressure of gas which prevails during the day-time in many places causes not a little inconvenience in the use of Bunsen burners of the usual form, as these are liable, under such conditions, to retreat when moved slightly, or when exposed even to such moderate currents of air as are produced by the motion of a person walking past them. To obviate this inconvenience, which he had experienced in his own laboratory, President Morton, of Hoboken, has devised, says the *Journal of the Franklin Institute*, a burner which seems to meet the difficulty in a simple but scientific manner. Considering that the retreat of ordinary burners was occasioned by irregularities of the nature of eddies in the flow of the ascending explosive mixture, by which its rate of ascent was reduced locally below that at which such mixture would burn downwards, he draws in the upper end of the main tube so that the mixed gases escape through what may be regarded as an aperture in a thin plate. This presents, as is well known, the conditions requisite for a smooth vein in the case of liquids, and inferentially in that of gases. In fact the burners so made have proved very satisfactory in actual use. The large burners will work under very low pressures, and smaller ones may be burned down until actually extinguished, without any adjustment of air supply, and yet without possibility of retreating.

The London Medical Record.

Authors of Papers, Theses, &c., will assist in the preparation of summaries by our reporters, by forwarding separate copies of their works.

BURRESI ON A CASE OF WOUND OF THE SPINAL CORD.

The following case, published by Dr. Pietro Burresi, of Siena, in *Lo Sperimentale* for November 1875, is of interest in consequence of the careful observations made on the functions affected by the injury.

Didaro Tanzi, aged thirty-three, was admitted into the hospital in Siena on May 10, 1875. On the evening of February 9 he had received in a quarrel, while stooping to pick up his cloak from the ground, a wound with a knife between the first dorsal and last cervical vertebræ, a little to the right of the middle line. He said that the blade was a little larger than an ordinary penknife. Immediately on receiving the wound, he fell; but remained perfectly conscious. It seemed to him, he said, as if both lower limbs and the left upper limb, as well as the belly and the left side of the trunk, were enormously increased in size, and that the skin covering them was distended to the utmost. Tactile sensibility was unaffected; he distinctly felt the ground on which he lay, as well as his clothes, and the arms and hands of those who lifted him. The lower limbs and left upper limb were quite motionless; and the right arm, although its movements were free, was too weak to be used in the slightest degree for the purpose of defence.

He was carried to the hospital, and treated in the surgical department. The sensation of distension remained more than thirty days, during which time he could not move the lower limbs at all, and the right arm only slightly. After the healing of the wound, electricity was applied. He almost completely recovered the use of the right limbs; and the paralysis of the left leg was improved. On April 28, he left the hospital, walking on crutches, and dragging the left foot. On May 10, not satisfied with the progress he was making, he returned to the hospital, and was admitted into the medical clinic, where the following observations were made.

Inspection.—The whole of the muscles of the left side, both of the limbs and the trunk, were rather thinner than those on the right; and this difference was greater in the lower limbs. The costal excursion in breathing was small; it was rather greater on the right side, so that there was distinct obliquity of the respiratory movements. While he lay on his back, the left leg and foot were slightly turned outwards, the right remained in the normal condition. If the patient were desired to bend the left knee, it was seen that he was able to bring the left foot into the normal position. When desired to raise his legs from the bed and place them at a right angle with the body, he raised the right limb with great power and readiness, kept it raised for some time, and then replaced it with ease on the bed. The left leg

was raised very slowly, and was with difficulty, or rather not at all, brought to a right angle with the body; it was kept up for a shorter time than the right, and oscillated and was turned inwards; he could perform abduction, adduction, flexion, etc., while the limb was raised, but could not replace it on the bed so steadily as he had done with the right.

When he stood erect, the left leg would not support the weight of the body without crutches. In walking, this leg was raised from the ground more than was necessary; the heel was not pressed thoroughly on the ground, even when it was the turn of the left foot to bear the weight of the body. The point of the left foot was, in walking, always turned downwards and a little inwards.

When blindfolded, he could not move a step; he had no further knowledge of the direction which he should take; the left foot was raised several centimètres, and the patient did not attempt to place it on the ground, but rested entirely on his crutches and would have fallen if not supported. His eyes being still bandaged, a sheet was spread on the floor, and the patient was led barefooted on to it; with the right foot he perceived that a body was interposed between the sole of the foot and the ground, both when he was walking on the bare floor and on the sheet; the sole of the left foot only felt a strong sensation of cold, both on the floor and on the sheet. When the bandage was removed from his eyes, he was astonished to find that he had been walking alternately on a sheet and on the bare floor. On his return to bed, it was noticed that the left lower limb, especially the leg and foot, was intensely red, and the whole left side felt distinctly colder than the right. The patient said that these phenomena always occurred when he walked; and that œdema of the left lower limb was readily produced.

The voluntary movements of the upper limbs were performed with ease, and were almost equal on both sides.

The cicatrix of the wound, about one-third of an inch in length, was about four-fifths of an inch to the right of the middle line. There was another scar at the external margin of the scapula in the posterior axillary line.

Palpation of the first-named cicatrix produced a little pain; it was not adherent to the subjacent tissues, nor could any signs of inflammatory exudation be detected near it. Palpation and percussion of the vertebral column did not produce any symptoms worthy of remark; nor did the application of sponges dipped in hot water along the spine. The whole of the muscles of the left side of the trunk and left limbs felt more flaccid than those of the right side; the difference being much marked in the left lower limb. The measurements of the lower limbs were as follows: immediately beneath the great trochanter, right, 49·5 centimètres; left, 47; above the patella, right, 34; left, 32; at the centre of the calf of the leg, right, 33·5; left, 30. Of the arms, the measurements were over the centre of the biceps, right, 25·5 centimètres; left, 24; above the elbow, right, 25·3; left, 24.

The grasp of the right hand was powerful; that of the left considerable, though much less.

Sensibility of contact.—The sensibility of contact of the surface of the body was tested by touching the skin lightly with a small piece of paper; it was found slightly diminished on the right side from the anterior inferior spine of the ilium to the foot: over the

remainder of this side it was normal. On the left side the contact sensibility was a little exaggerated, especially in the whole of the lower limb. There was perverted and exaggerated sensibility in the left little finger; when the outer border of this finger was touched with a piece of paper, the patient imagined that he had been touched with a pointed steel instrument, and forcibly withdrew the limb; the uncomfortable sensation continued for some seconds. The patient said that he felt formication, itching, etc., in the same finger and in the adjoining one.

Sensibility to pain was tested by slightly pricking the patient with a pin. On the right side, from the second intercostal space to the dorsum of the foot, the patient said that he felt that he was being touched, but could not distinguish when he was pricked with the pin; he did not feel pain, but simple contact, even when blood was caused to flow. Above the second intercostal space, in the right subclavian region, in the right side of the neck and face, and in the whole of the upper limb, he not only felt the punctures perfectly, but could distinguish the instrument with which they were made. In the whole of the left lower limb, in the left half of the trunk and in the left upper limb, pricking, although slight, produced intense pain and excited violent and continued reflex movements; this exaggeration of sensibility was greatest in the ring and little fingers. The hyperæsthesia was limited by the second intercostal space; above this, sensibility was normal. Posteriorly, there was the same analgesia of the trunk and limbs on the right side, limited above by a transverse line drawn across the fifth dorsal vertebra; and the hyperæsthesia of the left side extended to the same height. The hyperæsthesia and analgesia of the trunk were distinctly separated by the median line, and it was curious to observe how abrupt was the transition from analgesia to hyperæsthesia or *vice versa*, when the puncture scarcely passed beyond the median line on one side or the other, both in front and behind.

Thermic sensibility.—This presented modifications corresponding in extent with those of sensibility to pain. On the right side, the patient could not distinguish cold from heat at any part below the second intercostal space in front, and the level of the fifth dorsal vertebra behind; above, the thermic sensibility was normal. On the left side, the patient could not only distinguish heat from cold, but moderate temperatures were perceived in an exaggerated manner, warm substances appearing to be boiling, and cold ones freezing; this sensation was much more intense in the left arm, and especially in the left little finger. Above the limits already indicated, the thermic sensibility was normal, as on the right side.

Sensibility to tickling was retained; but on the left lower limb the reflex movements which it produced were exaggerated.

Electric sensibility and contractility.—To test these, a Gaiffe's electro-magnetic apparatus was used, the positive pole being applied to the spine a little above the cicatrix between the last cervical and first dorsal vertebrae, and the other pole alternately to the right and left sides of the body. The muscular contractions were very powerful on the right side, and were attended with slight pain; on the left side the contractions were also very intense, and great pain was produced at all the points to which the pole was applied.

Local sensibility.—When Weber's æsthesiometer was applied to the dorsum of the right foot, the right leg and thigh, and the right half of the trunk, the patient could not distinguish the two points when two centimètres apart. Above the second intercostal space, the patient felt the two points at a distance of one centimètre ($\frac{1}{39}$ inch); and in the whole of the right upper limb he recognised two punctures made simultaneously at a distance of two centimètres ($\frac{1}{8}$ inch). In the whole of the left lower limb, when the points of the instrument were less than two centimètres apart, the patient perceived sometimes one, sometimes two points at the same time; he also often had an indistinct feeling of formication, which was readily confounded with the painful sensation produced by the needles of the æsthesiometer. When the points of the instrument were two centimètres apart, he distinctly felt both at the same time, and an exaggerated sensation of pain, and reflex movements were produced. He also felt the two points when two centimètres apart in the whole left side of the trunk and left arm, especially at the outer margin of the little finger; and the sensation here was so exaggerated as to induce strong reflex movements of the finger and of the whole arm, and to leave a feeling of numbness for several minutes.

Muscular sensibility was tested by Jaccoud's method. With the right lower limb the patient perceived a difference in weight amounting to five grammes (77 grains); with the left, a difference of three grammes (46 grains). Muscular sensibility was very torpid on the right side, for, when weights of from two to ten grammes were added on that side, while no addition was made on the left, the patient always thought that he was sustaining a greater weight with his left foot than with his right. He had the same idea even when a kilogramme was placed in the bag attached to the right foot, and half that weight in the bag attached to the left; and, when 200 grammes more were added on the right side, he still thought that he was supporting a greater weight with the left foot.

During all the above-mentioned experiments, the patient was blindfolded.

[The result of the examination of the thoracic and abdominal organs is here given. It presents nothing special. The patient's general health was good.]

On May 16 treatment was commenced. The cold douche was applied along the spine once daily, and the electric current, by means of Gaiffe's apparatus, for ten minutes every morning and evening. On the left side, the negative pole was applied along the spine, and the positive to various parts of the lower limb; on the right side, the poles were applied in the reverse way. Pills containing 30 centigrammes (4.6 grains) and 2 centigrammes (0.3 grain) of alcoholic extract of *nux vomica* were given twice daily; and abundant nutritious food with wine was ordered.

On June 4, the patient was able to support himself well on his feet, making but little use of crutches. On June 7, the electricity was suspended for a time, in consequence of pain in the right loin and leg. On the morning of June 9, another examination of the patient was made, with the following result.

Inspection.—The patient easily raised both legs from the bed, but the left could not be brought to a right angle with the body. The patient could, however, lower both legs to the bed slowly and steadily. The greatest circumference of the right thigh was 49 centimètres; of the left, 47: of the right leg, 33 centimètres, of the left, 30.5. The greatest diameters

of the right arm and forearm were a centimètre more than on the left side.

Contact sensibility was very acute on the left side; on the right, it was absent from the foot to the knee, doubtful from the knee to the groin, and very weak from the groin to the second intercostal space.

Sensibility to tickling was very low on the right side; tickling of the sole of the right foot produced scarcely any reflex movement. On the left side, strong and extensive reflex movements were produced by tickling.

Sensibility to pressure was weaker over the whole of the right side than on the left.

Sensibility to pain was almost absent on the right side from the foot to the knee; from this point up to the second intercostal space it was much diminished; on the left side it was exaggerated. The upper limits of the hyperæsthesia and analgesia were the same as on the previous occasion; and the separation at the middle line was well marked.

Local sensibility.—In the left lower limb, the patient distinguished the two points of the æsthesiometer at a distance of two centimètres; on the right, he did not.

Thermic sensibility.—On the right side, a piece of ice felt moderately warm; but a temperature above freezing-point was recognised a little better. On the left side, thermic sensibility was very acute.

Muscular sensibility.—With the right lower limb, the patient distinctly perceived a difference of weight amounting to two grammes; he also perceived the same difference with the left limb, though perhaps less decidedly.

The patient generally walked with crutches; but he could walk with one crutch and a stick. He could stand on his feet, even with his knees bent.

On June 14, the patient could walk without crutches or stick, supporting himself merely by another person's hand. He got into bed by himself with ease. On June 22, he abandoned his crutches altogether, and walked with a stick only. On June 25, he was again examined, and the following observations were made.

Inspection.—The left lower limb was still less nourished than the right. He could easily raise both legs from the bed to a right angle with the body, and with equal ease and steadiness replace them on the bed.

Palpation.—The muscles of the left thigh and leg were a little more flaccid than those of the right limb. The circumference of the thighs at the thickest part were, right, 49 centimètres; left, 47: of the legs at the calves, right, 33 centimètres, left, 30.5. The right arm at the thickest part of the biceps measured 25.5 centimètres; the left scarcely 25. The right forearm had a circumference of 24.5 centimètres; the left, 23.5.

Tactile sensibility was very acute on the left side; on the right, it was greatly increased, and almost normal.

Sensibility to pain was greatly increased on the whole right half of the body, but was still a little less than on the left side. On the left side, the hyperæsthesia had almost entirely ceased, and the reflex movements, though greater than on the right, were less intense than before. The limits of the hyperæsthesia and analgesia above and on the middle line still existed.

Thermic sensibility was still imperfect on the right side. A piece of ice passed over the limbs and trunk and over the scrotum on that side gave a

doubtful sensation of warmth; while in the corresponding parts on the left side the same application produced a very acute sensation of cold.

Sensibility to pressure was normal on both sides.

Sensibility to tickling was very slightly obtuse on the right side; on the left it was very acute, but it did not produce the violent reflex movements noticed at the previous examination.

Local sensibility.—On the left side, the patient perceived two points two centimètres apart, and punctures at a less distance. On the right side, the points of the æsthesiometer were perceived only occasionally, on a limited part of the dorsum of the foot, at the distance of two centimètres.

Muscular sensibility.—With the right foot, he perceived distinctly a difference of two grammes in weight. With the left foot, he could not perceive it accurately, on account of soon becoming wearied.

He was able to walk with a stick, sometimes, but rarely, dragging his left foot on the ground.

On June 26, he returned to his home, where he continued the medicine, and used the electricity once daily.

On September 11, when the paper was written by Dr. Burresi, the following was his condition.

The left lower limb was still thinner and more flaccid than the right. Both legs were easily raised from and replaced on the bed; but the left limb trembled slightly when elevated. The left leg was slightly colder than the right. The measurements of the limbs in centimètres, taken as before, were: right thigh, 49; left, 47: right leg, 35; left, 32: right and left arms, each 24: right forearm, 26; left, 25.

Tactile sensibility was very acute over the whole of the left side. From the front of the right foot to about half way up the leg it was slightly imperfect, since occasionally the patient did not distinctly perceive the body with which he was touched; over the rest of that side it was normal.

Sensibility to pain was normal in the right lower limb; in the left it was a little higher. The previous local limits between lowered and excessive sensibility still existed, but now only denoted the passage from normal to a very slight degree of exaggerated sensibility. Pricking the soles of the feet produced reflex movements of moderate intensity, very little greater on the left side than on the right.

Thermic sensibility was normal on the left side, but on the right he could not distinguish cold from heat, and very often confounded one with the other.

Sensibility to pressure was normal everywhere.

Sensibility to tickling was normal on both sides. When the soles of the feet were tickled, reflex movements of normal intensity were produced.

Local sensibility.—In the right lower limb, the patient almost always perceived two distinct impressions at the distance of a centimètre; always, and very distinctly, at the distance of a centimètre and a-half. On the right side, the two impressions were perceived distinctly at a distance of a centimètre and a-half, and occasionally—less frequently than on the left—at the distance of a centimètre.

Muscular sensibility.—Two empty bags being placed one on each foot, the patient said that the left was the heavier. When a weight of ten grammes was added on the right side, he still made the same statement; but when five grammes more were added, he recognised the right as the heavier. With the left foot he recognised a difference in weight of one or two grammes, when there was already a weight

of five grammes in the bag, but not otherwise. With the right foot, he readily perceived a difference of two grammes.

He walked with the aid of a stick, and when in his house did not even use this; he said that he felt no fatigue in walking, and could stand several hours daily.

In commenting on this case, Dr. Burresi remarks that recovery was much more complete than in another case of division of the spinal cord on the right side, which he described in *Lo Sperimentale* in 1871. He has recently examined the patient, six years after the injury. The right lower limb is much less nourished than the right; the circumference of the left thigh at its middle is four centimètres more than that of the right, and the left calf measures two centimètres more than the right. When he lies on his back, he cannot raise the right leg vertically to the long axis of the body. The left leg is raised with great ease and energy, and can be placed at right angles with the body. The patient can walk considerable distances, but the right foot is always moved like a scythe (*mosso a falce*).

Sensibility to pain and thoracic sensibility are completely lost in the left leg and foot; pricking with a pin produces only tactile sensation, and the temperature of hot or cold water is not perceived. Tactile and local sensibility, and sensibility to tickling, are normal in the whole left lower limb; in the right, sensibility is normal in all forms, that of pain being perhaps a little exaggerated. The man has a constant sensation of cold in the right foot, especially in winter; the skin has the same colour in both feet; the right perspires rarely even in summer, and always much less than the left. To the touch the right foot feels much colder than the left; the difference of temperature diminishes gradually up to the knee, beyond which point it is not perceptible. The temperature of the right foot is 85.1° Fahr., of the left 95° Fahr.

In both the patients there remains a slight degree of paralysis on the side of the injury, slight atrophy and very slight hyperæsthesia on the paralysed side; while on the non-paralysed side there is diminution of thermic sensibility, and of sensibility to pain in Lazzeri (the former patient), of muscular sensibility in Tanzi.

In some further remarks, Dr. Burresi refers to the letter addressed to him by Professor Schiff, and published in *Lo Sperimentale* last year (see LONDON MEDICAL RECORD, July and August, 1875). In compliance with Dr. Schiff's suggestion, he ascertained the temperature of the axillæ, hands, and feet, in Tanzi's case, by thermometric observations made twice or more frequently daily from May 11 to June 14. (A detailed table of the observations is here given; the summary of which is stated by Dr. Burresi as follows.)

The minima and maxima observed were:—

	Minimum.	Maximum.
Right axilla .	98.06° Fahr.	100.04° Fahr.
Left axilla .	97.16 "	100.04 "
Right foot .	73.04 "	98.60 "
Left foot .	73.40 "	98.24 "
Right hand .	90.00 "	100.04 "
Left hand .	93.56 "	100.04 "

On May 19–22 there was fever, and the temperature in the axillæ rose to 102.74° ; on these days only the temperature of the feet rose above 98.6° , reaching as high as 99.68° .

In both the lower limbs the oscillation of tempe-

rature did not bear a relation to the general temperature as measured in the axillæ, except on the days of fever. The minimum temperature in the feet (73.04° and 73.4° Fahr.) was observed on June 25, with a temperature in the axillæ of 98.6° and 98.7° Fahr., and the maximum (98.6° and 98.24° Fahr.) was observed with an axillary temperature of 99.32 on June 16, and of 99.68° Fahr. on May 26.

Neither did the oscillation of temperature in the upper limbs bear relation to the general temperature; the minimum of 90° and 93.56° Fahr. was observed on June 9, when the temperature in the axillæ was 99.5° and 99.68° Fahr.

The oscillation of temperature in the lower limbs was not alike in the two feet. Many times the right foot was warmer than the left, and on May 18 the temperatures were respectively 93.2° and 87.8° Fahr.; many times it was colder, and on May 1 the temperatures were 91.58° and 94.28° Fahr. respectively.

The oscillations of temperature in the upper limbs were not similar in the two hands. On many occasions the right hand was colder than the left, the temperatures on June 2 being, right, 90° , left, 93.56° . At other times the reverse was observed, and on June 2 the temperatures were 98.6° and 97.16° .

In seventy-three measurements the right foot was colder than the left thirty-four times, warmer thirty-two times, and of the same temperature seven times.

In twenty-six measurements the right hand was colder than the left twelve times, warmer four times, and of the same temperature ten times.

On twenty-six days on which two or more thermometric measurements were made, the right foot was warmer in the afternoon than in the forenoon twenty-six times, and the left foot twenty-one times.

On twelve days on which two or more measurements were made, each of the hands was on ten occasions warmer in the afternoon than in the morning.

The conclusions from these observations are these. 1. Oscillations of temperature in the limbs occurred independently of the general temperature of the body. 2. These oscillations were observed in both upper and lower limbs, and on the non-paralysed as well as the paralysed side. 3. An increase of temperature in the limbs was observed much more frequently in the afternoon hours. 4. The temperature of the two lower limbs differed more frequently than that of the two upper limbs. 5. The temperature was greater in the non-paralysed as compared with the paralysed foot, rather more frequently than in the right hand as compared with the left. It may be inferred that more than one oscillation of temperature occurred in twenty-four hours. Thus, on May 14, at 4 A.M., the temperature of the right foot was 97.52° ; at 8.30 A.M., 83.48° ; at 1.30 P.M., 95.36° ; and at 6.30 P.M., 97.52° . Several times the temperature of the limbs in the morning was higher than at noon, and there was again a rise in the evening.

CHARCOT ON THE LOCALISATION OF CEREBRAL DISEASES.

(Continued from page 98.)

Before entering upon a description of these vessels, it is necessary to investigate more closely than has yet been done, in this course, the parts to which they are distributed. It concerns indeed parts of the brain of extreme interest in relation to the theory of cerebral localisations, to wit, the optic thalamus, the

nucleus caudatus, the nucleus lenticularis, and the capsula interna, which united may be called the *central system*, in contradistinction to the *cortical system*.

The lecturer recalls how the cerebral peduncle, rounded at the moment where it reaches the optic thalamus, flattens out after it has passed therein and enlarges from before backwards like a fan. Upon this fan nuclei of grey matter are disposed thus: posteriorly and to the inner side the optic thalamus; within this, but above and in front of it, the nucleus caudatus. On the outer side of the fan, and below the optic thalamus and the nucleus caudatus, is situated the nucleus lenticularis, which extends anteriorly nearly as far as the head of the corpus striatum, and behind as far as the posterior extremity of the optic thalamus. He describes shortly the form and relations of these grey masses, thus. First, the optic thalamus has the aspect of a flattened ovoid; the superior surface looks towards the lateral ventricle, and the inferior, which is also internal to the middle ventricle. It is with difficulty separated by dissection from the neighbouring parts. Second, the nucleus caudatus has the form of a comma or a pyramid, of which the thick end is directed anteriorly and to the inside, and the tail above and to the outside. The superior surface projects into the ventricle while the artificial inner surface is in its greater part applied to the upper extremity of the capsula interna. It is easy to isolate by dissection, but to do so we must cut through the numerous fibres it receives from the capsula interna. Third, the nucleus lenticularis, although covered on its whole surface, may be easily isolated; its form is that of an ovoid with one extremity anterior and the other posterior. It is divided into two parts: *a*. the anterior third, constituted by a uniform mass of grey matter, is confounded in its anterior extremity with the intraventricular nucleus; *b*. the second portion, which corresponds to the two posterior thirds, is flattened from above downwards, so as to present an angle within towards the capsula interna. The inner and superior surface is intimately united to the capsula interna, and the under surface is parallel to the base of the brain. The external surface is in relation to the capsula externa, and beyond that with the nucleus tæniæformis and the island of Reil. In a hardened preparation, it is easy to separate the capsula externa from this outer surface, on account of the absence of medullary fibres or vessels passing from one to the other. The capsula interna is in part at least the prolongation not of the whole cerebral peduncle, but of the basis or crust, the tegmentum becoming connected with the corpora quadrigemina and the optic thalamus, and not taking part in the formation of the capsula interna. It was formerly held that the capsula interna was an immediate and complete emanation from the base of the peduncle. This has been disproved by MM. Luys and Kölliker, but these authors have gone too far in stating that the capsula interna is formed entirely of fibres of the corona radiata, which terminate in the ganglia, and of fibres which, leaving the ganglia, expand in the corona radiata; for MM. Meynert, Henle, and Broadbent, are of opinion that there exists a third order of directly continuous fibres which pass from the crust to the grey matter of the hemispheres. The reality of their existence depends upon a certain number of pathological proofs, such as the cases of descending degeneration observed by M. Vulpian and the lecturer, in which yellow softening, having

destroyed in a great extent the median convolutions, without concomitant alterations of the corpus striatum, gave rise to a degeneration which could be followed right down as far as the lower part of the cord. He thinks that of these fibres those anterior are centrifugal, and connected with the movements of the limbs, while those posterior are for the transmission of accessory impressions. In short, the capsula interna is thus constituted: 1. By direct peduncular bundles which pass through it without stopping in the ganglia; 2. By indirect peduncular bundles, some of which pass to the corpus striatum, reaching it by its under surface, while others go to the nucleus lenticularis, which they penetrate by its first segment. They are very numerous in this segment, but become less and less so in the second and third, to which inequality is due the difference in colour of these three segments. To these bundles, which from the base of the peduncle pass to the central grey ganglia, certain bundles succeed in the upper part of the capsula interna, which, taking origin in the ganglia, go to take part in the formation of the corona radiata, and direct themselves towards the cortical grey matter. These bundles are called radiating bundles, and must be distinguished as (1) those that come from the corpus striatum; (2) those from the optic thalamus; (3) those from the nucleus lenticularis, which arise principally from the upper edge of the second and third segments. It follows, therefore, that four orders of bundles enter into the composition of the corona radiata, and connect the capsula interna with the cortex of the brain. These are:

1. The bundles from the optic thalamus.
2. Those from the corpus striatum.
3. Those from the nucleus lenticularis.
4. Those direct from the base of the peduncle.

The lecturer goes on to describe the arterial circulation in the central ganglia, under this name designating the thalami optici, the corpora striata, and their annexes. He points out that in this position the vascular system is of great pathological importance, for not only have we the ischæmic alterations met with in the cortex, but also hæmorrhages, rarely met with in the latter situation. According to the statistics collected by Andral and Durand-Fardel, in 199 cases of hæmorrhage, the optic thalami and corpora striata were the seat of rupture in 102, and only seventeen times did the extravasation originate in any other part of the brain; on the other hand, ischæmic alterations, according to Durand-Fardel, are much more common at the periphery, and the lecturer's own observations at the Salpêtrière confirm this statement. He points out that, if the study of the cortical arteries is a necessary introduction to the consideration of ischæmic softening, so in like manner the present details are indispensably preliminary to the history of intracerebral hæmorrhage.

He proceeds to recall to his hearers that the arterioles which constitute the central system are derived from each of the three great arterial trunks in the immediate neighbourhood of their origin from the circle of Willis; those for the corpus striatum are arterioles of half a millimetre to a millimetre and a-half in diameter, according to M. Duret. Their direction is perpendicular, and, borrowing Heubner's simile, they resemble the straight shoots at the base of a forest tree; in their perpendicular course they resemble the arteries of the cortex, but these latter are according to Robin's definition capillaries, not arterioles. Moreover, the central arteries have another

character which distinguishes them very plainly from the cortical vessels, namely, they are 'terminal arteries'; that is, they terminate in pencil-like tufts of capillaries, not anastomosing with neighbouring vessels, and not communicating in any way with the territory of the cortical arteries; whichever way injections are made, no communication can be demonstrated. He directs attention to the analogous arrangement in the pons, the median arteries passing backwards without anastomosing; and in the medulla the same disposition exists, modified by the fact that the arteries there arise, not from the vertebral trunks, but from the spinal arteries. The lecturer thinks it possible to find in the mode of origin and distribution of these arteries a mechanical explanation of the frequent occurrence of rupture in these parts; thus on the surface of the hemispheres, where hæmorrhages are comparatively rare, the arteries do not pierce the brain-substance until after a long course in the pia mater, and till after they are transformed into very slender vessels, properly speaking, capillaries; on the other hand, the road from the heart to the great ganglia at the base is very short. The arteries distributed to them are almost directly derived from the arteries of the circle of Willis, a circumstance extremely favourable to their rupture, though compensated for in some measure by their course being at right angles to that of the parent stems, and also by the difference in calibre. Compared with the cortical arteries they are very voluminous, especially the arteries of the corpus striatum; and, lastly, the absence of anastomoses does not allow the collateral circulation to relieve excessive pressure in any given vessel:—

The three great arterial trunks all take part in the supply of these ganglia, but their share is very unequal; the anterior cerebral takes the least, next the posterior cerebral, and of all the Sylvian artery is the most important; this therefore will be taken as the type for description. The following is their distribution.

(a) The Sylvian artery supplies the greater part of the nucleus caudatus, the whole of the nucleus lenticularis, a part of the optic thalamus, and the whole extent of the internal capsule.

(b) The anterior cerebral artery only supplies, and that not constantly, the anterior extremity of the nucleus caudatus.

(c) The posterior cerebral artery, besides furnishing branches to the choroid plexuses and the inner surface of the ventricles, supplies the inner and posterior part of the optic thalamus, the corpora quadrigemina, and the tegmentum.

It is necessary to develop still farther the description of the arteries of the corpus striatum; afterwards the necessary facts relative to the central vessels derived from the anterior and posterior cerebral arteries will be briefly related. In order to follow these branches after they have pierced the brain-substance at the locus perforatus anticus, a dissection must be made, and the grey matter of the island of Reil, the subjacent white matter, the nucleus tæniæformis, and the capsula interna must be removed, thus laying bare the external surface of the nucleus lenticularis in its whole length, and now we can follow the distribution of the principal arteries of the corpus striatum. We see that they are arranged like a fan on the surface of the grey matter, but they soon pierce its substance, and are lost to view. The ultimate distribution of these arteries can only be followed by making transverse

sections. A first section made posterior to the optic chiasma shows only the nucleus caudatus and the nucleus lenticularis, the optic thalamus being more posterior. The arteries just now lost sight of reappear here in their deep course; moreover, other still smaller arterioles are visible on the external surface of the nucleus lenticularis, which may be called the inner group. These, after springing from the Sylvian trunk, rise almost perpendicularly in the two first segments of the nucleus lenticularis and in the contiguous parts of the capsula interna. The external group is yet more interesting; they may be divided into two groups, the first, anterior or arteriæ lenticulo-striatæ, the second, posterior or arteriæ lenticulo-opticæ. One of the arteries of the anterior group is above all important on account of its size and the part it plays in intracerebral hæmorrhage. After having penetrated the third segment, it traverses the superior part of the capsula interna, then reaches the thickness of the nucleus caudatus, and continues right up to the most anterior extremity of this ganglion, passing from before backwards. The study of this artery ought to be made on sections anterior to that described above. The posterior group are disposed on the same model, only, after having crossed the most posterior part of the capsula interna, they reach the outer and anterior extremity of the optic thalamus, where they are distributed. He repeats that we have here to do with *terminal arteries*; and that, if the injections be made too forcibly little eruptions will take place, imitating, by their seat and their form, the hæmorrhagic extravasations which we meet with in pathological conditions. As to the branches of the anterior cerebral, all that need be said is that they can give rise to very circumscribed hæmorrhages, but which may have real gravity, as they frequently open into the ventricles. The posterior cerebral artery deserves more minute attention. We need, however, only refer to the branches sent by it to the optic thalami. These are of two orders; the first, the posterior internal optic artery, supplies the inner surface of the optic thalamus, and is capable of giving rise to hæmorrhages serious from the frequency of extravasation into the ventricles; the second, the posterior external optic artery, traverses part of the cerebral peduncle before entering the hinder part of the optic thalamus; rupture of this artery causes hæmorrhages which frequently are poured out into the substance of the cerebral peduncle. Having collected these facts, highly interesting in their relation to the theory of pathological cerebral localisations, it is necessary to examine them a little more closely, commencing with those which concern the central ganglia.

(A.—a.) The whole system of central arteries derived from the Sylvian may be obliterated by embolism or thrombosis of the main trunk. Then the softening affects almost the whole mass of the central ganglia, only those parts supplied by the anterior cerebral and optic arteries remaining intact. We have there a very summary localisation, in general of extreme gravity, and which epitomises, so to speak, clinically, all the pathology of the ganglionic centres. The symptoms connected with this softening are no others than those of common cerebral hemiplegia, with accompanying cerebral hemianæsthesia.

(b) Analysis can penetrate into this complex association. It is not, however, right to believe that we are in a position, for the present, to recognise by particular symptoms the destruction of the nucleus.

caudatus, of the optic thalamus, of the nucleus lenticularis, or *à fortiori*, of their different segments.

(c) It is possible, notwithstanding, that we may, by means of the actual distribution just considered, recognise an anatomical localisation, susceptible of revealing itself by special symptoms and permitting, in consequence, a regional diagnosis. This condition is realised when the softening affects all or nearly all the extent of the parts supplied by either the anterior or posterior divisions of the external group of arteries derived from the middle cerebral. We see that the symptoms differ in the two cases; the symptoms of cerebral hemianæsthesia present in the one (when the posterior division is affected) are absent in the other.

(B.) That which has just been said of softening is also true of hæmorrhage. This is very frequent in this region, as these arteries are very subject to the form of sclerosis terminating in miliary aneurisms. We may commonly find in a hæmorrhagic extravasation an artery bearing little aneurisms on its prolongations.

Most commonly hæmorrhage takes place, not, as is usually believed, into the substance of the corpus striatum, but outside it, more precisely in contact with the external surface of the nucleus lenticularis, between this surface and the capsula externa. However, it must be noted that the interpretation of the signs of hæmorrhage presents difficulties which do not exist in the same degree in softening, on account of the compression to which neighbouring parts are subjected by the effused blood.

It is possible to reduce to a very small number of propositions the facts definitely acquired relative to the regional diagnosis of the different parts which enter into the composition of the central ganglionic masses.

1. We are not in a position to recognise isolated lesions of each of the nuclei without participation of the capsula interna. Thus we cannot distinguish during life a limited lesion of the nucleus lenticularis from a circumscribed lesion of the nucleus caudatus; and the lesions of the optic thalamus, —though on this point some reserves may be made— are confounded with those occurring in the two compartments of the corpus striatum.

The symptoms which accompany these lesions, limited to the grey masses, are those of common cerebral hemiplegia. This form of cerebral hemiplegia may be called cerebral, to distinguish it from those motor paralyses resulting sometimes from a lesion of certain superficial regions, and which by opposition the lecturer proposes to call cortical cerebral hemiplegias.

2. In the majority of cases the paralysis due to a lesion of these central ganglia affects movement only, the disturbances of sensibility occurring only under certain circumstances hereafter to be considered.

3. Hemiplegia connected with lesions so circumscribed within the grey masses is commonly transitory, not well marked, not irrecoverable, and comparatively benign. In formulating this proposition, it is obvious that it does not include cases in which serious complications occur, such as hæmorrhage into a ventricular cavity; for in such a case grave symptoms, early contraction, and epileptiform convulsions supervene, and death, more or less rapid, is the almost necessary consequence. This benignity is due to the fact that in such cases the ganglia are not entirely destroyed; for instance,

the nucleus caudatus is never entirely destroyed, at least by itself, without participation of the capsula interna or other grey masses. On the other hand, the transitory character of these paralyses ought to indicate a functional supplementation between different ganglia and between different parts of the same ganglion.

In opposition to this benignity, the lesions of the capsula interna, even when they are limited to the white matter and do not affect the grey masses at all, produce common cerebral hemiplegia, in a form generally very well marked and more or less persistent. Thus, even when well circumscribed, principally when situated low down on the side of the peduncle, these lesions determine a motor paralysis, which is accompanied almost necessarily by late contractions—a symptom of bad omen, as a rule announcing that the paralysis will resist all therapeutic means.

The symptoms vary according to the seat of the lesion in the capsula interna; if the anterior two-thirds, the parts supplied by the lenticulo-striate artery, be alone affected, the paralysis will be simply motor; if on the other hand the posterior third, supplied by the lenticulo-optic arteries, be destroyed, then hemianæsthesia follows as a necessary consequence. Most often, the lesion being seated in mixed territory, both phenomena are present.

In the preceding exposition the lecturer has only alluded to *destructive* lesions of the capsula interna, which produce in this tract an irreparable loss of substance; these must be distinguished from those which affect the capsula interna only by contiguity, being themselves limited to the ganglionic masses which surround it. Thus the distension of one of these ganglia by a hæmorrhage would cause compression of part of the capsula interna and a suspension of the function of the fibres compressed, but, as the fibres would be only compressed, not destroyed, on the removal of the pressure by reabsorption of the clot or otherwise the paralysis would disappear. Such a state of things is of frequent occurrence clinically, and has led to errors in the interpretation of symptoms, as it has been usual to ascribe to the destruction of these ganglia symptoms which were purely owing to the compression of parts of the capsula interna. Supposing the case of a hæmorrhage at the seat of election, that is, just on the outer surface of the third segment of the nucleus lenticularis. On the outer side of the lesion the convolutions of the island of Reil, the nucleus tæniæformis, and the capsula externa, resist the efforts of the effused blood, while the ganglia are pushed towards the ventricular cavities. Whilst the hæmorrhage remains limited to the anterior two-thirds of the nucleus lenticularis, the corresponding portion of the capsula interna alone will be affected; but as, little by little, the effusion extends from before backwards, so as to involve the posterior part, the hinder portion of the capsula interna will in like manner become compressed, and hemianæsthesia will be superadded to the already existing hemiplegia. When, therefore, on the one hand, hemiplegia is found associated with a lesion of the corpus striatum or hemianæsthesia, with injury of the optic thalamus, we must not conclude, as many authors have done, that these are centres either of motility or common sensibility, but that the phenomena are simply the results of compression of certain bundles of the capsula interna. For, if the patients survive, the symptoms disappear; and, on examining the brain, only a linear ochreous cicatrix

in the ganglia is left to mark the site of the former hæmorrhage.

In order to support what has gone before and to prepare his hearers for further investigations, the lecturer proceeds to recall certain details relative to the anatomy of the capsula interna. Following Meynert, he makes the following dissection. Having opened the lateral ventricles, he removes successively the tegmentum or superior layer of the peduncle, the corpora quadrigemina, and the entire optic thalamus; this being done, there are exposed to view the crust or under layer of the peduncle, and higher up the peduncular fibres passing to the nucleus caudatus. The fibres belonging to the nucleus lenticularis occupy a place situated below and external to the preceding. On observing the innermost and hindmost part of the fan formed by the peduncular fibres here exposed, a bundle can be distinguished detached from the rest, and which, without penetrating the grey masses, curves backwards at the point where it reaches the inferior border of the nucleus lenticularis. This is a direct bundle, which passes to the corona radialis without stopping in the grey matter of the central ganglia. The course of this bundle has been followed by M. Meynert in the brains of monkeys, and he finds that it passes into the white substance of the occipital lobe just outside the posterior cornu, and terminates in the grey matter of that lobe. It passes downwards as far as the pons Varolii in the lower layer of the peduncle, where it occupies the most external part; having reached the pons Varolii, it is found to lie in the posterior part of the pyramidal bundle, and keeps the same position in the anterior pyramid itself as far as the decussation, after which it goes to join the posterior spinal bundles. Such are the facts, according to M. Meynert; but, interesting though they be, they are not of themselves sufficient to explain the problems which occupy us, and the lecturer takes this opportunity of repeating that physiology and pathology cannot be deduced from the facts of anatomy alone. It is therefore important to add to these certain clinical and anatomopathological proofs, especially the observations of MM. Türk, Rosenthal, Veyssière, and Rendu. He says that it is the unanimous result of the concurrence and comparison of these observations, that lesions affecting the posterior lenticulo-optic region of the capsula interna, have for their necessary consequence, that form of hemianæsthesia which is called cerebral, and in which the senses presided over by the cerebral nerves properly so-called, the optic and olfactory nerves, are implicated in a manner to reproduce faithfully the characters of hysterical hemianæsthesia, and that on the contrary in all the cases where, this region being preserved, the lesion affects only that part of the capsula contained in the nucleus lenticularis and the head of the nucleus caudatus, anæsthesia is absent. The clinical data which are of such incontestable importance are supported by the direct experiments of MM. Veyssière and Duret, who found by making limited lesions of the central parts of the brain by means of a spring trochar, that when the posterior part of the capsula interna was destroyed, hemianæsthesia of the opposite side of the body inevitably occurred, and was often accompanied by a slight degree of motor paralysis, which latter phenomenon was alone present without accompanying anæsthesia when the lesion affected only some part of the two anterior thirds of the capsula. All, there-

fore, concurs to prove that in the posterior part of the capsula interna there are centripetal fibres serving to carry sensory impressions from the periphery of the opposite side of the body to the cortical grey matter. These fibres pass direct to take part in the formation of the corona radiata. Near their origin these fibres being, as it were, gathered together, and comprised in a very limited space, produce, if injured, very extensive anæsthesia; but higher up, where they are spread out, a similar lesion produces much less pronounced effects, and this is not a mere *à priori* truth, but a well-established clinical fact. It is important to ascertain whether a lesion of the occipital lobes also determines crossed hemianæsthesia. Unfortunately, information on this head is not sufficiently explicit, and the point must be reserved. Nevertheless, it is necessary to notice that the fibres which compose the posterior part of the capsula interna, and their emanations, cannot be considered as a centre of sensorial or sensitive impressions. These bundles can only be considered as a place in which all the centripetal fibres are found represented before diverging towards the superficial parts of the brain.

In his observations on hemianæsthesia, M. Charcot endeavoured to show that it is a consequence of lesions of the posterior part of the capsula interna or its expansion in the corona radialis, and the action of these lesions may be either destructive or compressive, or perhaps suspensive; he reserves to himself the determination of the value of the latter term. For the purpose of bringing more into relief certain points hitherto left in the background, he refers briefly to the characteristics of the disease, which he names cerebral hemianæsthesia to distinguish it from all other forms of deadening or suppression of sensibility which do not owe their origin to a brain-lesion. This disease presents characters exactly similar to hysterical anæsthesia, which is by far most commonly unilateral; the head, the limbs, the trunk on one side of the body are affected, and the functional derangement usually affects the sense of touch, pain, and temperature, the electro-sensibility of the muscles not sparing even the mucous membranes. It is important to notice that it is not only common sensibility that is affected, but also the special senses, not only those whose nerves emanate from the medulla, as the senses of taste and hearing, but also those of sight and smell, whose origin is from the brain proper. Taking as an example the affections of sight, the lecturer points out that hysterical amblyopia differs in no respect from the crossed cerebral amblyopia due to organic disease. Taking first the case of hysterical amblyopia we find: 1. The more or less pronounced diminution, or which is much more rare, absolute loss of sight in the eye of the side corresponding to the hemianæsthesia. 2. There exists in the fundus of the eye no alteration visible by the ophthalmoscope, no difference of vascularity between the two eyes. 3. Acuteness of sight is frequently diminished by one-half or altogether. 4. There exists a concentric and general reduction of the field of vision. 5. Lastly, the peculiar general and concentric reduction of the field of vision for colours merits slight attention. He recalls to the minds of his hearers that, in the normal condition, the retina is not throughout equally sensitive to different colours; that for blue the field of vision is largest, next for yellow, then orange, red and green, while lastly, violet is perceived only by the most central part of the retina. In the pathological

condition now under consideration, this normal physiological condition is exaggerated and the chromatic circles are concentrically reduced in a more or less marked manner following the physiological law. The circle of violet may be reduced to nothing, and the disease progressing, violet, red, and orange will follow in turn, yellow and blue persisting to the last, until all colours are finally imperceptible, and the patient sees all objects of a neutral or sepia tint. Such are the phenomena, which the lecturer has many times demonstrated in hysterical patients, and they are found constantly in many cases of cerebral amblyopia, accompanied by hemianæsthesia, and due to a localised lesion of the brain. He would insist particularly on the absence of ophthalmoscopic changes, which permit us to separate this disease from those in which neuro-retinitis and choked disc are easily recognisable. The fact that the localised lesions of the brain which cause hemianæsthesia cause in consequence crossed amblyopia, is of immense importance to the theory of cerebral localisations. It is known that, according to the theory of Von Graefe and to the recently published work of Dr. Schoen, such cerebral lesions cause suppression of the right or left half of the field of vision according to the side of the lesion. M. Charcot considers this view of Von Graefe's too absolute, and would formulate in opposition the following theory; 'the lesions of the cerebral hemispheres which produce hemianæsthesia, determine equally crossed amblyopia and not lateral hemiopia.' He is not in a position to deny that lateral hemiopia is due to some localised lesion of the brain, but is inclined to the opinion, that when this phenomena exists it is rather the result of contiguity, and the implication of the optic tracts. He considers this a proper place for some details relative to hemiopia and the presumed anatomical cause of its development. He refers to the anatomical hypothesis of a semi-decussation in the optic commissure, which was emitted first by Newton in his *Treatise on Optics*, 1704. This theory consists in supposing that the external nerve-tubes on each side pass direct to the respective eyes, while those on the inner cross in the commissure. This theory does sufficiently explain lesions of the optic tracts, the commissure and nerves, but not the lesions beyond the corpora geniculata. There is not a single observation in support of such a view; and moreover, modifying a little further the above anatomical hypothesis, and assuming that those tubes which decussate in the chiasma reach their deep origin without further decussation, while those which pass direct to the retina undergo in the deep parts of the brain, possibly the corpora quadrigemina, a complete decussation, there would result a re-union of the tubes supplying the whole of each retina at some given point in the depth of the brain-substance, so that, while a lesion of the tract or the nerves would produce a lateral hemiopia, on the other hand a lesion situated in the substance of the hemisphere would produce crossed amblyopia. He then proceeds to inquire whether crossed amblyopia is an habitual accompaniment of hemianæsthesia, resulting from a lesion of the capsula interna. This hemianæsthesia of common sensibility finds its explanation in the existence of a bundle of direct centrifugal fibres, that is to say, fibres which do not stop in the central ganglia, and which, at the exit of the capsula interna, form the most posterior part of the base of the corona radialis. He asks whether any connection exists between this bundle and those sensorial fibres,

destined to form the communication between the visual apparatus and the cortex of the brain, and in order to answer this question, he considers it necessary to first study the deep origins of the optic nerves. If we study the anatomy of the corona radialis by removing the superior parts of the hemispheres, so as to lay bare the ventricular cavities, and detach the nucleus caudatus with its corresponding radiating fibres, the cortico-optic radiating fibres may be seen. These may be divided into three groups: some pass towards the frontal regions; others direct themselves mesially or laterally; others again going posteriorly are designated, after Gratiolet, who first studied them, cerebral expansions of the optic nerves. This last group, the especial objects of our study, are only separated from the posterior cornu by the ependyma and the tapetum.

It is in this very region, but in a deeper plane, that are distributed the cerebral expansions of those centrifugal fibres, lesions of which cause hemianæsthesia of cerebral origin. There is, therefore, a relation of contiguity between these bundles and the optic expansions which can give an anatomical explanation of the frequent co-existence of hemianæsthesia and crossed amblyopia, if it can be established that these expansions are really a more or less direct prolongation of the optic nerves. In order to examine this last point, it is necessary to consider what we already know relative to the origin of the optic nerves. We know that behind the optic commissure, the optic nerves are called the optic tracts, and are divided into two portions, internal and external. The external portion, following the researches of MM. Meynert, Huguenin, and others, takes its origin in three nuclei of grey matter, namely, the optic thalamus, the external corpus geniculatum, and the nates. This origin received some support from the experiments of M. Gudden, who having extirpated the eyes of very young rabbits, killed them after several months, and found that atrophy had extended to the nates, the optic thalami, and the external corpora geniculata, while the testes and the internal corpora geniculata were intact. The internal portion passes manifestly into connection with the corpus geniculatum internum, and traversing this terminates in the nates. According to M. Huguenin, this internal portion in men, at least, is in direct anatomical relation with the testes. In a recent case of an ataxic woman, who had been blind for fifteen years, the grey induration of the optic nerves was followed as far as the corpora geniculata; the nates and testes had preserved their normal colour, but were much reduced in size.

It is necessary to follow the connections of the centres just enumerated with the grey cortex of the brain. These connections are in fact formed by a system of fibres, which constitutes the most posterior part of the radiations of the optic thalamus, and which are sometimes called the optic radiations of Gratiolet. The anatomical details relative to this point may be followed in a plate borrowed from M. Meynert. Bundles from each of these centres pass to join the direct peduncular fibres. In this collection of fibres are found mingled without doubt fibres from the olfactory tract, and clinical facts indicate also the mingling of fibres connected with the auditory and gustatory nerves. If this at present hypothetical arrangement should be verified anatomically, it would explain the occurrence of crossed interference with smell, taste, and hearing, which are habitually phenomena of cerebral hemianæsthesia. The next

question he sets himself to solve is, whether there are any facts in support of his hypothesis of a deep decussation of the direct fibres (those that do not cross in the chiasma) of the optic nerves. He says that the subject presents extreme difficulty in a purely anatomical point of view. From the preceding description it may be seen that the only point in which the bundles approach the middle line of the brain in their deep course is in the corpora quadrigemina, and here, although without doubt numerous crossing fibres may be demonstrated, it is impossible to prove that they are continuous with the optic nerve-fibres, more especially that they are continuous with the direct fibres of those nerves. Flourens proved by experiment that ablation of the optic tubercles caused crossed amblyopia in mammals and birds, but these animals were those having eyes directed outwards, and in which the decussation in the chiasma is without doubt complete. In man, the proof is yet wanting. He quotes, however, an observation of Dr. Bastian's, in which case an unilateral lesion of the testes produced cross amblyopia, but considers the question too delicate to be decided by this single case.

He next passes to consider whether crossed amblyopia is the only functional derangement of vision in brain-lesions, or whether hemiopia does ever occur under these circumstances. He is inclined to think that in the reported cases, the lesion, being in the lower part of the brain, has implicated the optic nerves themselves. He admits that there are certain cases in which right-sided hemiopia is complicated with aphasia and right side paralysis, and cases in which it is the consequence or accompaniment of migraine, which are not explained by this hypothesis.

(To be continued.)

ANATOMY AND PHYSIOLOGY.

CUNNINGHAM ON THE BRONCHO-ŒSOPHAGEAL AND PLEURO-ŒSOPHAGEAL MUSCLES.—In the *Journal of Anatomy and Physiology*, for January, 1876, Dr. Cunningham fully describes the position, relations, and probable function of the broncho-œsophageal and pleuro-œsophageal muscles. Professor Hyrtl was the first to describe them, in the year 1844, and two years later Sir J. Paget confirmed the discovery; but ever since then the existence of these muscles has been well-nigh ignored, being either not mentioned at all in most anatomical works, or else dismissed after a very transient notice. [Meckel, in his *System der vergleichenden Anatomie*, makes no mention of these muscles.—*Rep.*] About nine months ago Dr. Cunningham's attention was directed to them by a student, and since that time he has made fourteen dissections of these muscles.

In all of these cases, one excepted, the pleuro-œsophageal muscle was present, while in ten cases both muscles were seen. The exceptional case, in which neither muscle could be found, was that of an old cripple, most of whose extremities had been paralysed for several years, and the muscular tissue of whose œsophagus was very pale and loaded with connective tissue.

1. *The Pleuro-œsophageal Muscle.*—After two flaps, made by cutting longitudinally through the posterior wall of the pericardium, have been turned to each side, this muscle, in the shape of a thin slip about one inch and a half long, and from a

quarter to half an inch broad, will be seen rising from the left pleura, passing over the thoracic aorta, and forming the left boundary of the posterior mediastinum. Thence, after arching over the aorta, it enters the left margin of the œsophagus, its fibres diverging, a few upward, but most downward, to the stomach. Instead of only one, there is sometimes a second, or a third, or even six muscular slips. When one alone is present, its position corresponds with the eighth dorsal vertebra.

2. *The Broncho-œsophageal Muscle.*—A deeper dissection is required to expose this. After removal of the left lung by cutting through the bronchus as it enters the organ, and gently drawing forward the cut extremity of the former by a hook, the muscle will be seen in the loose tissue between this tube and the gullet. This is never so well marked as the muscle first described. In the shape, generally, of two slips with a circumference no greater than whipcord, its fibres, expanding as they pass downward and backward, mingle, at a point a little above the pleuro-œsophageal muscle, with the anterior longitudinal fibres of the gullet. Besides these two muscles, the œsophagus has sometimes yet other, but less constant, muscular connections with the walls of the posterior mediastinum.

None of the theories regarding the function of the two muscles are satisfactory. According to Hyrtl they act together—the broncho-œsophageal pulling the posterior wall of the bronchus outwards, while the pleuro-œsophageal holds the œsophagus downward. The occasional absence of the former slip, however, negated this view. Henle was of opinion that they protect the arteries from pressure and friction, the broncho-œsophageal, during the act of swallowing, drawing the gullet forward, and thus moderating the pressure of the bolus of food upon the bronchial artery. The only conclusion at which Dr. Cunningham can arrive, after much thought, is 'that these muscles, by their attachments, serve to give the œsophagus fixed points upon which it can contract the more readily in the process of swallowing.' They may also take some part in restoring the gullet to its right position, after each descent which it makes with the diaphragm in inspiration.

J. C. GALTON.

MARKWALD ON DIGESTION AND ABSORPTION IN THE LARGE INTESTINE IN MAN.—The investigations of M. Markwald (*Virchow's Archiv*, vol. lxiv. p. 505, and *Centralblatt für die Medicinischen Wissenschaften*, no. 7, 1876), relate to a case of preternatural anus, in consequence of a piece of bowel at the junction of the cæcum and ascending colon becoming gangrenous in a case of strangulated hernia. The aperture of entrance into the large intestine was completely separated from the aperture of exit in the small intestine; the mucous membrane of the large intestine was quite normal. The small intestine was throughout its entire extent capable of being experimented upon. The temperature of the large intestine was 37·6° Cent. (99·7° Fahr.); the peristaltic action was very regular. The patient was forty-nine years of age, delicately built, but in good health.

(a) *On the Sugar-forming Ferment of the Large Intestine.*—Pieces of sponge were attached to strings and introduced into the upper end of the large intestine and left therein for two hours. During this time they had proceeded from 6 to 10 inches along the canal. The intestinal juice obtained by squeez-

ing the sponges was a somewhat sticky, turbid fluid, with a strong alkaline reaction, and containing a small quantity of albumen. When mixed with starch mucilage and kept at 40° Cent. (104° Fahr.) no sugar or at most only a trace was formed. Starch-mucilage enclosed in bags of muslin and placed in the large intestine, even after from four to six hours, showed no trace of sugar.

(b) *Digestive Experiments.*—1. Fibrin was introduced into the large intestine, partly free and partly enclosed in bags, some of which remained for twenty days in the intestine. The quantity of fibrin diminished considerably. The decomposition products found in the contents of the intestine were peptones, tyrosin, and indol, and the whole mass was penetrated by bacteria. The author regards the whole process as one of decomposition. Eighty-four per cent. of a quantity of fibrin introduced into the large intestine and left there for twenty-six hours, was dissolved. 2. Coagulated egg-albumen also diminished considerably in weight. The decrease in weight did not increase proportionately with the time. The loss in twenty-four hours was 54 per cent.; after forty-six, 60 per cent.; and after seventy-two hours, 55·2 per cent. The products were the same as in the case of fibrin. If a large quantity of albumen, e.g. 181,818 grammes, were introduced, the diminution in the weight was not so large; in the case cited it only reached 30·4 per cent. The author sought to determine the absorption of albumen by estimating the quantity of nitrogen in the urine. Only in one experiment was there an increase of nitrogen in the urine, the patient being previously in a state of nitrogen equilibrium. The result of the experiments, the late absorption, seems to show that the case is rather one of decomposition than of normal digestion.

(c) *Absorptive Experiments.*—1. Water was absorbed from the large intestine only slowly. For the absorption of 250 cubic centimetres of water at least twelve hours were necessary. 2. Solutions of peptones. The patient was again in a state of nitrogen equilibrium; the increase of nitrogen in the urine after the introduction of the peptones ought to indicate the amount of absorption. The peptones were prepared from fibrin. In two experiments the solutions of peptones introduced proved powerful irritants, excited violent peristalsis, and no absorption was detected. 3. Equally negative results were obtained in four experiments with fluid egg-albumen, partly pure, and partly mixed with chloride of sodium. Regarding the normal process, the author concludes that the absorption from the large intestine goes on slowly, and only when a small quantity of water is present. Water is chiefly absorbed; peptones, when they are present in small quantity in the large intestine; in large amount, they excite the intestine and cause diarrhoea. Fluid albumen is not absorbed. That the function of the large intestine can be dispensed with without any material disturbance of the health is proved by the present case, the patient feeling quite well two and a half years after the formation of the fistula. Lastly, the author details an operative procedure for the performance of a fistula of the small intestine in the dog, just above the ileo-cæcal valve. Of the various preparations for the artificial nourishment *per anum*, the author prefers the flesh-pancreas clyster.

NAWROCKI ON THE INFLUENCE OF THE BLOOD-PRESSURE ON THE FREQUENCY OF THE HEART-

BEATS.—F. Nawrocki (*Beiträge zur Anat. und Phys. als Festgabe für C. Ludwig gewidmet*, p. 205, and *Centralblatt für die Medicinischen Wissenschaften*, no. 4, 1876), as the result of his investigations upon the above subject, finds that, when all the nerves which pass to the heart are divided, the frequency of the pulse is independent of changes of the blood-pressure (agreeing with the results of Knoll and Worm Müller). On the contrary, the force of the individual systoles increases with the increase in the blood-pressure. With intact vagi, Nawrocki, like Bernstein, Asp, and Knoll, found that the frequency of the heart-beats was diminished as soon as the pressure was increased, and accelerated when the blood-pressure was diminished. In all these experiments it is immaterial, as far as regards the frequency whether the accelerating nerves are intact or not.

In order to avoid as far as possible the irregularities which often occur in these experiments, the author made a very large number of experiments—about 400—on dogs, cats, and rabbits.

The experiments may be divided into three series: 1. Experiments with the heart completely removed from external nervous influences; spinal cord, vagi, depressors, and cervical sympathetic divided. (The section of the cervical sympathetic, according to Nawrocki, is unnecessary, in as far as he states that this nerve does not contain any fibres which either accelerate or regulate the heart.) 2. With the accelerator nerves intact; cervical spinal cord (and thoracic sympathetic) intact; vagi and dorsal spinal cord in one series, also intact; in another series divided. 3. With intact vagi: (a) on animals with intact nerves; (b) with exclusion of the accelerator nerves (section of the spinal cord). The increase of the blood-pressure was produced by compression of the aorta without opening the abdomen. (As in Stenson's experiment, a ligature is passed around the aorta from without, so that the vessel may be compressed against the spinal column.) Also by stimulation of sensory nerves; by transfusion of defibrinated blood from the same species. In experiments where the dorsal spinal cord was divided, an increase of the blood-pressure was obtained by electrical stimulation of the peripheral end of the cord. The diminution of the pressure was produced on the one hand by cessation of the above means of increasing the pressure; on the other, by stimulation of the depressor, section of the splanchnic nerves, and blood-letting.

VON WITTICH ON THE PHYSIOLOGY OF THE KIDNEY.—Von Wittich (*Arch. für Micros. Anat.* vol. xi., and *Centralblatt für die Medicinischen Wissenschaften*, no. 3, 1876) remarks that, if five cubic centimetres of a solution of ammoniacal carmine be injected into the jugular vein of a rabbit, death ensues in about fifteen minutes. If an examination be then made, not only the ureters, but generally the bladder also, are found to be filled with a red secretion. The microscopic examination of the preparation hardened in acidulated alcohol reveals the following appearances. The surface of the glomeruli is generally of a diffuse red colour, with irregular granular particles lying on them. There is no appearance of a more intense coloration of the nuclei of the vessels of the glomerulus, or of the layer of cells covering them. Between the glomeruli and the capsule there exists a colourless space. The epithelium of the capsule is not tinged. The lumina of the convoluted tubules are filled almost throughout their entire

length with masses of carmine, whilst the cells lining the tubules are always colourless. The straight tubules are generally filled with carmine. From these observations it appears (as was shown by Chrzonszczewsky), that the excretion of the carmine begins pretty regularly in the capsules of the glomeruli, and that then the excreted particles pass along the tubuli contorti into the tubuli recti without the gland-cells however being implicated in the process.

The author shows that, in from forty to fifty seconds after the injection of the carmine into the jugular vein, the first portion of the urine tinged with carmine passes from the pelvis of kidney into the ureter. In the rabbit, seven days elapse before the last traces of the five decigrammes of carmine injected are excreted by the kidneys. The same experiments performed on pigeons showed, without exception, accumulation of the carmine in the lumen of the tubules, whilst the accumulation of the urinary constituents proper, *i.e.* of the urates, takes place in the cells of the tubules.

There is therefore a remarkable difference in the relation of the kidneys to an ammoniacal solution of carmine and to sulphindigotate of soda; the latter, as was first shown by Heidenhain (LONDON MEDICAL RECORD, vol. i. p. 823), and confirmed by Von Wittich, being excreted by the cells of the convoluted tubules. Injection of these two substances simultaneously showed these differences most pronouncedly, although the author is unable to assign a reason for these appearances; nor did the introduction of these substances by the lungs serve to explain the result. Exactly the same results were obtained with the ammoniacal carmine as when it was injected into the blood directly; whilst the introduction of the indigo-carmine by the trachea was disadvantageous, in as far as this colouring matter could only be found in traces in the cells of the tubules.

In conclusion, the author remarks that, because the cells of the tubuli contorti remain uncoloured during the excretion of carmine, we are not entitled to conclude that they do not take a part in the process. From the investigations of Gerlach, we know that carmine does not adhere to living cells; it is therefore not impossible that the carmine, like the indigo-carmine, may have passed through the cells of the tubuli contorti, without, however, being fixed by them. But the opposite peculiarity must be shown in the case of indigo-carmine, *viz.*, that it can be precipitated in the protoplasm of living cells.

DROSDOFF AND BOTSCHETSCHKAROFF ON THE CONTRACTION OF THE SPLEEN AND ITS RELATION TO THE LIVER DURING STIMULATION OF THE SPLENIC NERVES.—Drs. Drosdoff and Botschetschkaroff (*Centralblatt für die Medicinischen Wissenschaften*, no. 5, 1876), were led, by the observation of Botkin that the liver increased in size where the spleen contracted under the influence of the induced current, to investigate the relation of the spleen to the liver in animals. The spleen and liver were exposed in a narcotised dog. The quantity of blood in the portal system was estimated by introducing a manometer into the splenic vein; the results were the following. 1. On section of the nerves of the splenic plexus, the spleen increased in all directions, and on stimulating the peripheral ends of the nerves it diminished in size. 2. When the contraction of the spleen produced by stimulating the peripheral end of the nerves commenced, the liver began to increase in size. The hepatic lobules

became sharply defined, their colour deepened, and their tissue became firmer. When the spleen increased the liver again became smaller, its borders sharper, the outlines of its lobules disappeared, its tissue softened. 3. After every contraction of the spleen the number of white blood-corpuscles in the liver increased. This observation agrees with the results of Tarchanoff and Swan (LONDON MEDICAL RECORD, August, 1875). 4. Stimulation of the splenic nerves increased the pressure in the splenic vein. 5. Ligation of all the splenic vessels did not completely extinguish the power of the spleen to increase and to contract, but only diminished this property.

ARNDT ON THE GANGLIONIC CELLS OF THE SPINAL GANGLIA.—R. Arndt (*Archiv für Microscop. Anat.* vol. xi., *Centralblatt für die Medicinischen Wissenschaften*, no. 5, 1876) finds that the typical form of the cells of the spinal ganglia is a more or less irregular flat disc. They are at least bipolar. The author believes that multipolar cells also exist, which, in addition to two strong and well marked processes, send out a number of finer ones, which are, however, easily torn off or overlooked. Arndt was unable to convince himself of the existence of unipolar ganglionic cells. The apolar bodies which do occur in the spinal ganglia, the author regards as the result of an anomalous development. The two chief processes of the ganglionic cells generally arise very near each other. In many cases each process arises from the ganglionic cell by itself, and is enclosed in a special sheath, which is a continuation of the capsule. In other cases, the two processes approach each other, and are enclosed in the same sheath. They are medullated almost at their origin, but the author has observed processes originally non-medullated.

MALASSEZ ON SOME VARIATIONS PRESENTED BY THE TOTAL AMOUNT OF THE BLOOD.—Malassez (*Archiv de Physiologie*, 1875, p. 261, and *Centralblatt für die Medicinischen Wissenschaften*, no. 11, 1876) has continued his researches on this subject in Ranvier's laboratory. By the term 'blood-corpuscle capacity' (*capacité globulaire*), the author expresses the quotient obtained by dividing the absolute number of blood-corpuscles by the weight of the animal expressed in grammes. A rabbit weighing 2,450 grammes has 919,450 millions of blood-corpuscles, and, according to the above, a blood-corpuscle capacity of 373 millions.

By the term 'richness in corpuscles' (*richesse globulaire*), the author means the number of blood-corpuscles contained in a single cubic millimètre of blood. Following these two data throughout the animal series, it is shown that the *capacité globulaire* is greatest in the mammalia (rat 630 millions, rabbit 373 millions). It is generally less in birds than in mammals. It is very considerably diminished in the osseous fishes, more so in the cartilaginous species and the amphibians (torpedo two to six millions, frog seventeen millions, proteus two millions, axolotl one to four millions). The *richesse globulaire* also diminishes in the animal kingdom in the same direction as the *capacité globulaire*, but the two curves do not run parallel, in as far as the latter sinks more rapidly than the former. By the smaller decrease of the *capacité globulaire* the greater diminution of the *richesse globulaire* is counterbalanced, and in a certain sense compensated for.

While in the lower animals both the *capacité* and *richesse globulaire* are less, the dimensions of the blood-corpuscles are much greater. One might assume that the smaller number was thereby compensated. According to the author, this is not so. Under all circumstances the lower animals are at a disadvantage, and have a smaller quantity of blood than animals higher in the scale.

The author has made extended observations on the influence of age on the number of blood-corpuscles in the rabbit, rat, guinea-pig, dog, cat, chick, and frog larvæ. In mammalia, that both *capacité* and *richesse globulaire* rise after birth and reach their highest point in the third or fourth week of life; they then begin to fall, and sink below the point at which they started. In adult animals both seem to rise again considerably. In the chick, the *capacité globulaire* scarcely varies during the whole time of incubation; after birth it sinks pronouncedly; it rises again in the adult, without, however, again reaching the height which it attained during the embryonal condition.

Investigations on animals under different hygienic conditions, e.g. starvation, feeding, etc., gave as the general result that the *capacité globulaire* always diminished when the hygienic conditions were not so good, or when the general condition of the animal was in any way deteriorated. A case of transfusion, in which M. ascertained the *capacité* and *richesse globulaire* both of the person who gave the blood, and the one into whom it was transfused, is employed by the author to calculate the quantity of blood in both persons. For the one who received the blood, the quantity of blood was one-seventieth of the body weight; for the other one-ninth, which numbers agree exactly with those of Lehmann, Weber, Welcher, and Bischoff.

KLUG ON THE BLOOD-CURRENT IN THE CORONARY ARTERY OF THE HEART.—F. Klug (*Centralblatt für die Medicinischen Wissenschaften*, no. 8, 1876) cites an experiment to prove the truth of a remark of Brücke, 'That the capillaries during the contraction of the cardiac muscles are so compressed that they are caused to disappear.'

The hearts of two frogs were exposed; the one was ligatured during the systole, the other during the diastole. The hearts were then excised, and placed in dilute sulphuric acid, in order to cause coagulation of the blood. The muscles of the heart stopped during diastole was rich in blood, whilst the one ligatured during its systole showed only traces of blood in its outer layers. The same experiment was repeated on a rabbit with the same results.

W. STIRLING, D.Sc., M.D.

RECENT PAPERS.

Note on some of the Conditions which may alter the Position of the Fissures of Rolando. By M. Féréol. (*Gazette Médicale de Paris*, February 12.)

On the Action of Anæsthetics on the Muscular Element, and the Peripheric Nervous Element. By Dr. Couty. (*Gazette Médicale de Paris*, March 4.)

Physiology of the Viruses. By M. Chauveau. (*L'Union Médicale*, March 7.)

On the Influence exercised by Excitation of the Peripheric End of the Sciatic Nerve on the Temperature of the Corresponding Limb. By Dr. Lepine. (*Gazette Médicale de Paris*, March 25.)

Considerations on the Causes of the Precocious Development of the Clavicle. By Dr. Baudon. (*Archives Générales de Médecine*, April, 1876.)

The Mechanism of the Hip-joint. By Professor E. Albert. (*Wiener Medizinische Jahrbücher*, 1876, 2d Heft.)

PATHOLOGY.

SENFTLEBEN ON THE CAUSE OF KERATITIS AFTER SECTION OF THE TRIGEMINUS.—Senftleben (*Virchow's Archiv*, vol. lxx.) remarks that section of the trigeminus in its intracranial course in rabbits, whether a small or a large part of the nerve be left intact, is always followed in from ten to twelve hours by a distinct opacity of the cornea, as soon as the eye is left without a protective covering. This opacity never reaches the margin of the cornea; after several hours a cloudy (secondary) opacity gradually proceeds inwards from this point. The cause of the primary opacity is not the evaporation favoured by cessation of the closure of the eyelids, for when the eyes were covered at once by coarse wire-gauze no change occurred. The cause is not to be sought for in certain trophic nerve-fibres contained in the trigeminus, for the diseased eye reacts to the same stimuli as the sound one; nor is there any difference either regarding the origin or course of the affection from that in the sound eye, in which exactly the same affection, running the same course, can be produced by traumatic stimuli. The affection is therefore to be ascribed to traumatic influences, to which the anæsthetic eye is continually subjected, and therefore does not appear when the eye is carefully protected from the first.

The microscopic investigation of the changes produced in the cornea by section of the trigeminus, as well as by direct mechanical stimulation, showed that the primary opacity is not caused by an inflammation (*i.e.* suppuration), but by a circumscribed necrosis, marked off sharply in all directions peripherally from the normal surroundings, but not so sharply defined towards the substance of the cornea itself. This necrosis is marked off by a wavy line, which is indicated specially by an indistinctness, and latterly (after twenty-four hours) by a disappearance of the cornea corpuscles (and of the epithelial cells). This necrosis produces a suppurative inflammation (secondarily), which results in a diffuse secondary opacity of the margins produced by the wandering white blood-corpuscles.

The cells do not penetrate into the necrotic parts, but collect at the margin and completely dissolve it, so that a loss of substance takes place, which, however, is soon replaced, so as further traumatic influences are prevented. That the primary affection is a necrosis was shown by its relation to bile-pigment, which tinges the necrotic but not the living parts. The simultaneous extirpation of the superior cervical ganglion is without influence on the occurrence and course of the affection of the cornea following section of the trigeminus.

WM. STIRLING, D.Sc., M.D.

SNELL ON THE MORBID ANATOMY OF EPILEPSY. In the last number of the *Zeitschrift für Psychiatrie* for 1875, a report is given of a paper by Dr. Snell in which he relates the results of the *post mortem* examinations of 100 insane epileptics.

The first point noticed was the fact that epileptics are more short-lived than other lunatics; the average age of the hundred at death was thirty-three years, a very low one considering that all the patients were over fourteen, and most over twenty, when they were admitted to the asylum where the observations were made. Only eight exceeded the age of fifty, and one was over seventy, but he had not become epileptic until past sixty.

As to the cause of death, the large number of 47 had died either in a fit or in the comatose state which often follows. In these cases the seizures were either very violent or frequently repeated. Such deaths are usually ascribed to brain-paralysis, but Dr. Snell thinks they are caused by interruption of the respiratory process; this disturbance of respiration is evident during the fit, and, after death, the brain does not usually present any appearance which may be directly referred to a sudden change of blood pressure; on the other hand, in the lungs, especially after the slower form of death, œdema is frequent, and hyperæmia and even hypostatic hepatisation are not uncommon. In the 47 cases, œdema occurred 15 times, hypostatic hepatisation 6 times, and hyperæmia frequently in the remaining cases. In one case the lungs were unaltered, but this also occurs occasionally in asphyxia from other causes. In only two of the cases was there extravasation of blood between the membranes.

The next most frequent cause of death was tuberculosis of the lungs; it occurred in 31 cases, generally in the form of caseous deposits and softening. Tuberculosis was often present in other organs, but only once in the meninges of the brain. In one case there was abscess, and in another gangrene, of the lung. In a few instances the liver and kidneys were diseased, and in one case there was a great displacement of the transverse colon.

The appearances in the brain were very various. There were two cases of injury to the skull and brain. The first case was that of a man who was kicked on the head thirty-five years before death; an old fracture was found on the right frontal eminence; the membranes were adherent beneath it; and a cyst, of the size of a hazel-nut, filled with turbid fluid was found in the corresponding convolution. Numerous calcareous plates were found on the posterior surface of the cauda equina, and there was œdema of the lungs. The other case occurred in a boy who received a punctured wound near the outer and upper border of the os frontis at four years of age; he died at seventeen, and a splinter of bone was found projecting inwards at the seat of injury; the membranes were adherent all around, and there was a corresponding depression a quarter of an inch deep in the second frontal convolution. The lungs were œdematous.

Two cases of cysticercus of the brain are given. A man died at sixty-one, having been epileptic seventeen years, with large delusions. In the cortical substance of both hemispheres were numerous calcified cysticerci of various sizes, up to that of a pea; there were also several in the grey matter of the right corpus striatum. There was œdema of the lungs. A woman died at thirty-four, having been epileptic six years, and suffered from delusions of persecution and hallucinations of several senses. There were a cysticercus half an inch in diameter in the right corpus striatum, and five other smaller ones in the cortical substance at the base of the middle and anterior cerebral lobes. There was œdema of the lungs.

Two cases of medullary cancer of the brain are related. The first was that of a man who died at thirty-eight. He had been epileptic nine years, and had had hallucinations of smell and hearing, with periodical attacks of melancholy. After death a mass of medullary cancer was found on the left side of the base of the brain, compressing the pons Varolii and optic nerve; it invaded all three lobes of the

hemisphere, and was connected with a cyst of the size of a hazel-nut in the floor of the anterior horn of the lateral ventricle. The greatest diameter of the new growth was one inch and a half. The lungs were œdematous. The second instance was that of a man who died at thirty-three, epileptic two years, had had large delusions and hallucinations and attempted suicide; there was a cancer of the size of a hen's egg in the right posterior cerebral lobe, projecting into the posterior horn of the lateral ventricle and into the middle lobe; the hippocampus was completely absorbed by the tumour. This patient died after a succession of twenty-three fits in three hours. The lungs were œdematous. In neither of these cases was any motor paralysis observed.

Three cases of morbid changes in the hippocampus major, to which Meynert has drawn attention, are given. 1. H. H. had fever at seven, was thenceforward imbecile, became epileptic at sixteen, and developed large delusions. He died at twenty-four; and the left hippocampus was found sclerosed. Tricuspid stenosis and insufficiency were also present. 2. W. S. was demented and epileptic ever since an attack of meningitis (?) in childhood. He was maniacal after the fits. After his death, at nineteen, the left cornu ammonis was found to be shrivelled into a hard thin cord, consisting almost entirely of connective tissue. There was œdema of the lungs. 3. W. W., rather imbecile from birth, became epileptic at seven. He was inclined to violence and had a distinct affection of speech; he stammered and had great difficulty in forming a sentence. He died at twenty-six: both hippocampi were seen to be reduced to hard bands, their ependyma was rough and leathery, and the ependyma of the fourth ventricle was folded and thickened. The lungs were œdematous.

In one case there was a calcareous mass in the superior vermiciform process of the cerebellum; the patient had been long epileptic, was demented and often excited. One instance was observed of caries of the petrous bone, with softening of the neighbouring parts of the brain; the patient had been thirteen years subject to epilepsy with periodical excitement.

In four cases out of the one hundred the pia mater was found firmly adherent to the convolutions as it frequently is in general paralysis. All four patients were deeply demented, and three of them had been epileptic since their earliest childhood.

CHAS. S. W. COBBOLD, M.D.

LETZERICH ON DIPHTHERITIC ENCEPHALITIS.—In Virchow's *Archiv* (1875, p. 419) is an article on diphtheritic encephalitis, by Dr. Ludwig Letzerich of Braunsfels. It is based upon a case which had lately occurred in his own family. A strong and well-formed male infant was noticed, ten days after birth, to have diarrhoea, which was attributed to some slight digestive disturbance. It then began to refuse its food, and on examination of the mouth and throat the hard and soft palate were found to be in a state of extreme injection, while the tonsils and arch of the palate had diphtheritic membrane upon them. It should be said that since the birth of the child five persons affected with diphtheria, including two children, had come from the town or country to the house, and all had been treated by the local application of salicylic acid. The child had no fever or suppression of urine, which would convey the idea of a general diphtheritic state; therefore the treatment was confined to purely local measures, salicylic acid being dusted over the part.

Under this treatment the amount of the exudation diminished, though it returned to some extent. Still, by the eighteenth day the mucous membrane was quite free. Notwithstanding a free diet and the administration of stimulants, the child gradually sank, fourteen days after the cessation of the local disease. It had been remarked that it always remained very quiet, and without taking notice of external things, and was very drowsy; and these symptoms, together with its habit of sleeping with its eyelids open, and a peculiar cry, led to the idea that there might be some congenital deficiency of the brain, which had only gradually forced itself into notice, and that a local disease in the throat independent of it had brought about the fatal termination.

The head was opened five hours after death. Both parietal bones were hyperæmic at their hinder parts. The vessels of the dura mater, contrary to the bloodless state of the rest of the body, were gorged with a dingy fluid blood. The surface of the brain was very pale, but the substance showed blood-puncta on the surfaces of all sections. Extreme engorgement existed both at the base of the skull and at the base of the brain. The remarkably pale colour of the grey substance, especially of the fore and middle part of the right hemisphere, first of all attracted attention. On section, the grey substance seemed at first sight to be wanting, but on attentive examination one could observe a much distorted and faded boundary between the grey and the white matter. The right side of the cerebrum was œdematous and soft—conditions which seemed to have conduced to shrinking of the right lateral ventricle, and to a consequent want of symmetry in the two halves of the brain. The cerebellum was small. The proper contrast between the colours of its various parts was wanting, and in its leaflets were small round grain-like formations which projected visibly from the cut surface. The other viscera were not examined. The brain was examined in the fresh state and after hardening. The middle part of the right hemisphere was unusually soft, and its neuroglia was finely granular, many nuclei being embedded in it. [This description appears to indicate the existence of an inflammatory nucleated protoplasm undergoing granular changes.—*Rep.*] Besides the nuclei, bacteria in active movement, of much variety of form, and in unusual numbers, were found, groups of which, clustered together, occupied the interior of the ganglion-cells, the protoplasm of which was, with this exception, clear, though sometimes changed into glassy non-nuclear masses. It was found impossible to isolate the ganglion-cells. The examination of the front part of the right hemisphere gave a similar result to that of the middle part, except that the neuroglia-cells were less numerous, and the nerve-cells completely destroyed, their pericellular spaces empty, and their walls undergoing exuberant growth of plasma-cells.

The author thinks that, as in other organs of the body, the bacteria came by way of the lymph and blood-vessels. He has seen them developing outside the vessels after having penetrated the membranous wall. In such vessels the red blood-cells, while retaining their form, had lost their colour. The altered blood-cells were so dense in places as to obscure the vessels, and capillary hæmorrhages wanting in red colour are described.

The grey matter of the cerebellum was in a similar state, except that the nuclear proliferation was less marked, and the pericellular spaces less often filled by inflammatory products.

In the white substance, however, there was an extreme increase in the neuroglia-cells, amounting to millet-seed-sized nests, visible to the naked eye, and which were not unlike the section through a glioma of the brain. The ganglion-cells in the neighbourhood of each nest of cells were not so much altered as in the grey substance proper, or in the fore and median parts of the right cerebral hemisphere, and they could therefore be isolated with their contained bacteria. Their protoplasmic prolongations had not the hyaline appearance of normal cells, but were in a state of granular degeneration, and were densely beset with bacteria. The white substance of the cerebellum seemed normal, but here and there bacteria and granulation-cells were found between the fibres. In the white substance of the right hemisphere they were more numerous and in dense clusters, and the fibres, in consequence of a granular exudation, showed some indistinctness of structure. In the grey ganglia of the right lobe of the cerebrum, and in the cerebellum, micrococci were present, though only in inconsiderable number.

At first sight it is, indeed, remarkable that the grey substance of the brain should by preference allow these diphtheritic organisms to flourish in it and so cause its molecular destruction, while the white matter is much less affected. But a sufficient explanation of this is to be found in the difference in the distribution and in the course of the blood-vessels in the two tissues (grey and white). In the white matter the vessels have a much straighter course than in the grey, in which numerous anastomoses and loopings are found; and it is in these and in the many abrupt angles of the vessels—notably of the small anastomosing capillary venules—that diphtheritic organisms easily collect and thence extend by active growth in the connective of the organ. Thus it comes that the grey substance, in which such favourable conditions exist, is by preference more extensively attacked and destroyed.

The very distinct diminution of the cerebellum and the increase of the right hemisphere of the cerebrum are worthy of notice. Both changes had their origin in one and the same cause; since the greater part of the grey and the whole of the red-coloured substance of the small brain were destroyed by the fungus, and therefore wasted, the organ was of necessity smaller; the white matter was but sparingly attacked, and had almost a normal appearance. In the right cerebral lobe a very considerable amount of exudation-matter was present, both in the grey substance and between the white fibres. Therefore the lateral ventricle, as that part upon which an enlargement due to inflammatory exudation would most encroach, was smaller than its fellow.

From the pathological changes in the grey substance of the right cerebral lobe followed the above-mentioned symptoms, which were similar to those which are found after the removal of the hemisphere for physiological purposes.

The starting-point of the disease was, no doubt, the circulatory disturbance, which was present here as in all parts affected by diphtheritic organisms. Thus originated the vascular engorgements (by fungus-embola), the œdema of the tissue, and even the formation of watery exudations on the free serous and other membranes. From the appearances found, death may be said to have followed upon a gradually developing diphtheritic paralysis of the brain.

EICHHORST ON HÆMORRHAGE INTO THE SUBSTANCE OF THE CORD.—Eichhorst (*Charité Annalen* for 1874, Berlin, 1876), publishes a case of primary hæmorrhage into the cord, which, he thinks, sets at rest this *quæstio vexata* in pathology. The patient was taken ill on July 28, and died on August 1. On microscopic examination he found the vessels of the cord filled with blood-corpuscles and sacculated; the structure of the walls seemed perfectly normal; some were ruptured, and extravasations into the lymphatic sheaths or into the substance of the cord were seen. There was no change in the nerve-cells or nerve-fibres, no division of nuclei nor fatty degeneration. In some of the older extravasations a few granular corpuscles were seen. He can give no explanation of the etiology of the case; it was not traumatic, nor could it be called metastatic as the patient has always menstruated normally, and that function had been fulfilled at its accustomed period a few days before her seizure.

RECENT PAPERS.

- Intracerebral Syphilitic Arteritis. By Dr. Brochin. (*Gazette des Hôpitaux*, February 19.)
 A Case of Cryptorchidism. By Dr. Jacopo Facen. (*Gazzetta Medica Italiana-Lombardia*, February 12.)
 On a Lipoma of the Cervical Sympathetic. By Dr. Colomiatti. (*Gazzetta delle Cliniche*, February 8.)
 On the Giant-cell. By Dr. Colomiatti. (*Ibid.*)
 On Anæmia, Oligocythæmia, Dysemia: its various Forms and their Treatment. By Dr. Lebert. (*Archives Générales de Médecine*, April, 1876.)
 On the Pathological Changes of the Liver. By M. Charcot. (*Le Progrès Médical*, April 1.)

MEDICINE.

FRÄNTZEL ON THE OPERATIVE TREATMENT OF METEORISM.—Fräntzel (*Charité Annalen* for 1874, Berlin, 1876), after a pretty large experience in the treatment of puncture, concludes that it should only be undertaken in cases of peritonitis when death is imminent. He draws attention to the differential diagnosis of meteorism and gas in the cavity of the peritoneum, pointing out that the disappearance of the liver-dulness, and the absence of the metallic clang audible when the abdomen is auscultated and percussed simultaneously afford trustworthy indications of the latter condition when unconsciousness or heightened subjective impressions on the part of the patient, make reliance upon pain or tenderness impossible or untrustworthy.

EICHHORST ON CONSTRAINED MOVEMENTS IN BRAIN-DISEASES.—Eichhorst (*Charité Annalen* for 1874), following the physiological observations of Vulpian and Prévost, directs attention to the involuntary movements sometimes following apoplexies and other lesions of the brain. The patient lies on the right or the left side, and the head and eyes are turned to the same or the opposite side; if the position be changed by the attendants, the body soon recovers its previous posture. He thinks this affords a means of localising the lesion, for if both body and head are drawn to the same side, the lesion will be found on the opposite side; if only the head be drawn, the lesion exists on the same side; in some cases of deep coma this may be a valuable indication of the site of the lesion.

SOKOLOWSKI ON A CASE OF ACUTE IDIOPATHIC ENDOCARDITIS, WITH SUBSEQUENT EMBOLISM

OF THE LEFT MIDDLE CEREBRAL ARTERY, CEREBRAL SOFTENING, AND DEATH. — No. 13 of the *Deutsche Medicinische Wochenschrift* (December 18, 1875), reports the following case, from the pen of Dr. Alfred Sokolowski, late of the General Hospital of Warsaw, into which the patient, a servant-girl, aged twenty-three, was admitted on October 1, 1873. She stated that for four days, without any known cause, she had suffered from alternate heats and chills. Once or twice she had slight shivers and headache, as well as a general feeling of weariness, and loss of appetite. The catamenia had been regular ever since her fifteenth year. She had been confined two years before, without any untoward event. In fact, she had only suffered from indigestion. On admission, her pulse was 100, and temperature 102.6° Fahr. Physical exploration of the abdomen and lungs disclosed nothing abnormal. The limits of cardiac dulness were normal. On auscultation a soft systolic limit, resembling a friction-sound, was heard at the apex. The second sound was quite normal, but was heard badly at the base of the sternum and immediately followed by the murmur. The latter was not well heard at the base of the heart. Indeed, at the level of the fourth ribs, both sounds could be heard free from murmur. She passed about 1,500 cubic centimètres (about 53 ounces) of urine, of specific gravity 1,020, in the twenty-four hours. It was somewhat acid. In the evening her temperature was 104° Fahr. Pulse 100 as before. During the next two days her condition was as follows. Her pulse varied between 84 and 98. The morning temperature was 101.2° Fahr.; the evening 103° Fahr. On the third evening, percussion showed slight enlargement of the right ventricle, and the second tone of the pulmonary artery was accentuated. There was no enlargement of the spleen. Acute idiopathic endocarditis was diagnosed. From October 4 to 12 there was but slight alteration in the symptoms. The medication consisted in regulation of the diet and bowels, and the use of bark and digitalis. On the morning of October 13 it was noticed that she had become paralysed on the right side, and at the same time had quite lost her speech, so that she was only able to give a sort of cry of distress (*Klage-laut*) from time to time. She heard well with the left ear, and answered questions by signs. The pupils were not altered, but the left corner of the mouth was drawn. There was complete anæsthesia of the paralysed parts. Urine and fæces were passed unconsciously. The spleen was enlarged, and very tender on palpation. The temperature was 102.2° Fahr. Pulse 90. The heart-sounds were unchanged. The second tone in the pulmonary artery was strongly accented. In the evening her temperature was 104.8° Fahr. Pulse 100. Sensibility began to return in the right leg, below the knee, and she could move the right foot slightly. Otherwise her condition was as in the morning. The diagnosis now made was embolism of the middle cerebral artery on the left side, and embolism of the splenic artery—based on the sudden occurrence of right hemiplegia, the sudden enlargement of the spleen, the disturbances in her hearing and in the faculty of speech; the previously diagnosed endocarditis, and the youth of the patient, rendering cerebral hæmorrhage less probable. The loss of speech was quite peculiar. She seemed unable to articulate anything, except a sort of cry from time to time. Yet she made her wishes known, and answered questions by signs. There was thus a loss of articulate speech

(alalia) whilst thoughts continued to be formed in the brain, which she could not express in words. There was the form of alalia which Professor Jaccoud (*Leçons de Clinique médicale faites à l'Hôpital Lariboisière*, Paris, 1873) rightly calls logoplegia. October 14. Power of movement in the extremities, and speech, gradually returned. Morning temperature 102.2° Fahr., pulse 90. Evening temperature 103.8° Fahr., pulse 100. October 15. All paralysis and alalia had vanished. She was extremely weak. She answered questions rather glibly, but with full consciousness. In the course of the next twelve days she became gradually weaker. The evening temperature varied between 102.2° and 104.8° Fahr., the morning between 100.8° and 104° Fahr., the pulse between 88 and 100. Pneumonic symptoms set in. She lost her appetite, and suffered alternately from constipation and diarrhoea. The splenic enlargement and tenderness remained. The urine was now only from 800 to 1,000 cubic centimètres (= 28 to 35 ounces) and contained albumen. It contained urates, and hyaline casts. From October 29 to November 10 she was still worse. She no longer answered at once to questions, but repeated the same word over and over again. She even lost memory of her own name. The fever increased; the evening temperature rose to 105.2° Fahr.; the pulse was 120, and thready. There was more bronchitis, and some exudation into both pleural cavities. The quantity of urine decreased, the albumen increased. There were now signs of softening of the brain. Could this be localised? It seemed possible. Whereas the older French writers (Boillaud, Broca, Trousseau, and others) placed this spot in the midst of the third frontal convolution (*stella Brocæ*) the latest French observers, especially Jaccoud (*loc. cit.*) announce that the seat of the lesion is not very definitely fixed, but that it is commonest in the left corpus striatum and the island of Reil, and in the frontal convolutions, especially the third. Dr. Sokolowski's own experience led him to believe that this cerebral softening was in one or more of these regions. On November 12 the patient responded easily to questions, with full consciousness. There was, however, no improvement in any of the symptoms. Her tongue was dry, and she had diarrhoea. Both lungs now showed hypostatic pneumonia. On November 20 she died, quite conscious to the last.

The necropsy was made by Dr. Przewoski. The chief points were as follows. The arteries at the base of the brain were healthy, except the middle cerebral artery on the left side, in which a semi-transparent embolon of cartilaginous consistence was found. The right side of the brain was healthy, though rather pale. So was the left, except that the cortical substance of the island of Reil, the grey matter of the corpus striatum and of its lenticular nucleus were smaller, harder, and yellower than normal, and had a reticulated appearance—in other words, softening, with subsequent cicatrisation (*Vernarbung*) of the softened parts. There was fluid in the peritoneal and in both pleural cavities, and a little in the pericardium. The heart was greatly enlarged, especially on the right side. The walls of the left ventricle were not thickened. There were numerous yellow spots under the endocardium. The edges of the mitral valves were much thickened, and covered with numerous coagula of blood, some as large as a walnut; these clots were all attached to ulcerated patches in the thickened upper borders of the valves. The

right ventricle was much enlarged, otherwise normal, as were the aorta and pulmonary artery. The spleen was thrice its normal size, dark red, and had numerous sharply bordered 'blocks.' The liver was normal. The kidneys were about one and a half time: their normal size; their cortical substance was thickened, with small infarctions, forming the base of small cavities. The left kidney was largest, and slightly granular. The mucous membrane of both large and small intestine was thickly coated with mucus. The stomach, bladder, and genitals were normal.

Dr. Sokolowski remarks that primary acute endocarditis is very rare. Niemeyer would not admit it. Bamberger, Friedreich, Von Dusch, and Oppolzer, whilst admitting it, consider it as extremely rare. He also notes Professor Brodowski's observation, that the suddenness of the brain-symptoms, in connection with the loss of speech, is of great importance. For in case of tumours, growing slowly, the whole region may be involved without loss of speech. The vanishing of both the paralysis and loss of speech in forty-eight hours is of extreme interest. No doubt the collateral circulation was then established. Quite fourteen days afterwards, the softening seems to have attacked the cortical substance, and brought about the gradually developed condition of depression, mechanical repetition of words, etc., and loss of memory. From November 12 the depression decreased, consciousness returned, and was again perfect three days before death—symptoms which may be due to cicatrisation of the affected parts, and the vicarious action of the other cerebral hemisphere. [The reporter has given this case at some length, and as far as possible in the words of the author. It is of great interest, as confirming the views which Hughlings Jackson, Ogle, Broadbent, and other English observers have long taken, especially the former. The translator ventures, however, to think that the general course of the symptoms was probably due to enteric fever; in other words, typhoid or pythogenic fever, which never became localised in the abdomen, but spent its force on the heart, and perhaps on the kidneys. It seems also not improbable that the mechanical or parrot-like repetition of words at one period was due to poisoned blood, since the partial suppression of urine and the albuminuria are not unlikely to have given rise to uræmia at that date. Monotony is a marked character of toxæmic (especially uræmic) delirium.—*Rep.*]

LOOMIS ON PERITONITIS, AND ITS 'HEROIC' TREATMENT BY OPIATES.—The Clinical Lecture from which we quote, is no. 9 of 'A Series of American Clinical Lectures,' edited by Dr. E. C. Seguin, and published by G. P. Putnam's Sons, New York. Dr. Alfred L. Loomis is Physician to Bellevue Hospital, New York, and Professor of Pathology and Practical Medicine in the New York University. His remarks are founded on three or four recent cases. The first, a cabinet-maker, aged eighteen years, had enjoyed good health until the last three years. During this time he had had eight attacks before the present one, of intense abdominal pain, nausea, vomiting, and other symptoms of peritonitis. The attacks were preceded by constipation, and usually occurred in cold weather. The present attack followed three weeks after working all day in wet clothes. The pains began just below the navel. His symptoms on admission were those of collapse;

pulse, 120; respirations 40, thoracic; temperature, 101° Fahr.; thighs flexed on abdomen; mind clear. He was given four ounces of brandy per rectum, and morphia hypodermically. Convalescence was fully established seven days after. During that time twenty-one grains of morphia were administered hypodermically. Dr. Loomis remarks on his case that 'the presence of fecal vomiting proves, almost to a certainty, intestinal obstruction to have been the exciting cause of his disease.' Amongst the causes of acute peritonitis he enumerates the following.

1. In intestinal obstructions and perforations; including typhlitis, and perityphlitis, with ulceration; rupture of hepatic and other abscesses; ulceration and rupture of the stomach, of the gall or urinary bladder, hydatid cysts and aneurisms—in all these cases, the inflammation spreads rapidly over the entire peritoneum.

2. The extension to the peritoneum of inflammation from organs covered by peritoneum is found in cases of general peritonitis from the uterus and its appendages, the liver, spleen, venous thrombi, typhlitis and perityphlitis without ulceration. In all such cases the peritonitis remains for some time circumscribed. Peritonitis from contusions and penetrating wounds must be studied from a surgical standpoint.

3rd. In very many instances acute general peritonitis is the immediate result of an infection. Puerperal peritonitis, and the peritonitis which develops in the course of an infectious disease, as pyæmia, septicæmia, etc., may be classed under this head. The latter form should be regarded as a distinct type, and need not be discussed here.

The next case recorded occurred in a previously healthy man, aged sixty-one. It terminated fatally in twelve hours. There was a good deal of lymph effused, and the cause appeared to be diverticula in the descending colon, filled with fecal matter: these seemed to be the result of hernia of the mucous membrane through the muscular coat of the intestine, the sac in each being formed of peritoneum and mucous membrane. No openings were found in any of them, but their peritoneal surfaces were the seat of the most intense inflammation: Undoubtedly peritonitis existed when this patient's pulse was eighty.

Another case is given in some detail, of obstruction of the bowels, and peritonitis from firm fibrinous bands about the small intestine, with calcareous degeneration of the mesenteric glands. The patient was aged twenty-one, and the gland mischief and fibrinous bands probably existed from childhood. Another case is given of ulcerating sarcoma of the stomach, in a merchant aged forty-six. Another patient, aged thirty-four, had a pelvic abscess, with perforation of the vermiform appendix. These consecutive histories show 1st, that acute peritonitis is rarely, if ever, of spontaneous origin; and 2ndly, how difficult it often is to determine the cause. Dr. Loomis insists strongly upon 'the boiled spinach' character of the vomiting of peritonitis, fecal vomiting indicating obstruction. The symptoms and differential diagnosis are next given at some length, and with great clearness. English readers will, however, take more interest in the treatment advocated by Professor Loomis. For at least half a century the use of opium has been the practice of English medical men in the treatment of acute peritonitis. In America, however, Dr. Alonzo Clark has advocated a more heroic use of opiates. The details of this plan are as follows. 'As soon as you have decided that your

patient has acute peritonitis, administer at once from two to five grains of solid opium, or from one half to a grain of morphia. The exact quantity in each case is to be determined by the condition of your patient. As a rule, to a strong vigorous male you may give four grains for the first dose; to a feeble female it is not well to commence with more than two grains.' Dr. Loomis goes on to say:—'I have administered to patients with peritonitis four grains of opium every two hours for twenty-four hours, and then have obtained only a moderate effect of the drug. The point which you wish to reach in this disease is moderate narcotism, in which state you must strive to keep your patient, not only until all pain and tenderness have subsided, but until the pulse has reached a normal standard, and the tympanitis has entirely subsided.'

[Although 'moderate' narcotism is recommended, the symptoms described are those of a more extreme and dangerous degree. It is fair to Dr. Loomis to state that he says 'Avoid extremes—if you find it difficult to rouse your patient, stop the administration of opium.' Yet the reporter thinks the administration of forty-eight grains of opium in twenty-four hours, except to opium-eaters, is a dangerous practice. Some of the fatal cases recorded in the lecture seem to have been deeply narcotised. Surely if pain be relieved, and the bowels kept perfectly quiet by moderate doses of opium, no good purpose can be served by these heroic measures.—*Rep.*]

W. BATHURST WOODMAN.

RECENT PAPERS.

- The Pathogeny of Articular Rheumatism. By Dr. Beneke. (*Berliner Klinische Wochenschrift*, March 25.)
On Alalia in Enteric Fever. By Dr. Steintal. (*Ibid.*)
Electric Acupuncture of an Aneurism of the descending Aorta: Recovery. By Dr. Ciniselli. (*Gazzetta Medica Italiana-Lombardia*, March 25.)
A Case of Acute Anterior Myelitis (Atrophic Spinal Paralysis; Infantile Paralysis) in the Adult. By M. Laveran. (*Le Progrès Médical*, March 18.)
On the Conditions of the Curability of Embolism. By Dr. Bouillon-Lagrange. (*Gazette Hebdomadaire*, March 17 and 24.)
Relation of Cynanche Parotidea with Eruptive Fever. By M. Leon Colin. (*L'Union Médicale*, March 18.)

SURGERY.

LEONPACHER ON PNEUMOPERICARDIUM TRAUMATICUM.—An instance of this rare lesion has recently been reported by Dr. Leonpacher of Traunsteid (*Aerztliches Intelligenz-Blatt*, no. 44, 1875). The patient was a robust man-servant, aged thirty-six years, who, in an accidental fall from a hay-loft, struck his back violently against the ground. He at once suffered from severe pain and from dyspnoea, and was unable to raise himself. When first seen by Dr. Leonpacher, a few hours after the accident, he was lying in bed on his left side, and complained of much pain in the left half of the chest, and of shortness of breath. The respirations were very rapid, the pulse 92. Over the middle line and on the right side of the vertebral column, and between the ninth dorsal vertebra and the first lumbar vertebra, there was a subcutaneous collection of blood, which was very tender, and from which, on pressure, pains radiated towards the umbilical region. There could be heard, even at a short distance from the patient's bed, two loud and rapidly successive sounds,

one of which was isochronous with the impulse of the heart's apex, and of shorter duration than the other. Both were gurgling sounds, and resembled in their character the sound as of fluid being poured out of a bottle. These sounds intermitted, so that at times, for a short period only, the normal cardiac sounds could be heard. The impulse of the heart's apex was visible at a point one centimètre external to, and two centimètres below, the left nipple. On percussion, a tympanic sound was heard over the whole of a space bounded above by the third costal cartilage, below by the fifth rib, internally by the left margin of the sternum, and externally by the left nipple. Inferiorly the tympanic area was continuous with that of the clear sound over the stomach; externally there was a band about an inch in breadth, along which the sound was dull, between it and the resonant sound over the left lung. In the left axillary line there was absolute dullness below the level of the heart's apex. On auscultation the normal sounds of the heart could be clearly heard, and were made out to be distinct from the gurgling sounds at the apex. On the second day after that of the accident the patient could lie on his right side; there was no longer any severe pain in the left side of the chest, the gurgling sounds had ceased, and the impulse of the heart's apex could just be felt in the parasternal line above the fifth rib. Externally to this line there was a clear lung-sound. Percussion of the back of the patient gave a dull sound between the spine and a line drawn downwards from the inferior angle of the left scapula. Over this area of dullness no respiratory murmur could be heard, but only occasional rhonchus. On the fifth day after the accident, the swelling in the back was much smaller, there was pain only on deep inspiration, and all that the patient complained of was a slight cough. Pressure over the lower dorsal vertebræ no longer caused pain, the area of dullness at the back of the chest was much reduced, and a low respiratory murmur could be heard over the lower part of the chest on the left side. In the course of a few weeks the patient became quite well. In this case, the sudden occurrence of the lesion in a man who previously had been quite well, its traumatic origin, the presence in the pericardial region of a distinctly tympanic sound, surrounded by other percussive results, as a sonorous lung tone above, a narrow longitudinal band of dullness externally, which corresponded to extravasation of the pericardium, a tympanic stomach-tone below quite distinct from the clear sound above, the peculiar sounds heard during the movements of the heart, which were quite distinct from the normal cardiac sounds—all these striking symptoms were diagnostic of the presence of air in the pericardial sac. There were probably also some effusion of blood into this sac, and another distinct extravasation into the left pleural cavity. The author thinks that, as there was no pain in swallowing, and no pain or signs of irritation on the part of the stomach, the air collected in the pericardium came from the lungs, and that it probably passed from the left lung into the sac, through a rupture involving the seat of an old adhesion between the two structures.

RAVOTH ON VARICOCELE.—Professor Ravoth is of opinion that morbid irritability and neuralgia of the male genitals are almost always due to some local cause, and especially to varicocele (*Medicinisches Chirurgisches Central-Blatt*, no. 46, 1875). This surgeon states that for some years past he has treated

very successfully varicocele and phlebectasis of the saphena vein by truss-pressure. In almost all the cases of varicocele treated by him, he has found associated with this variety of phlebectasis irritable conditions of the genitals, indicated by frequent pollutions, defective coitus, testicular neuralgia, etc. He has never yet met with an instance in which these conditions did not cease on the disappearance of the varicocele. The author treats varicocele by applying an ordinary hernial truss with a pad, the pressure of which can be regulated by the patient. This truss is so applied that the pad covers the whole of the inguinal canal, and reaches anteriorly as far as the spine of the pubes. This truss is worn usually during the day only, but will prove of much service when worn during the night also, in those cases in which nocturnal pollutions and neuralgia persist notwithstanding the improvement effected by the pressure applied during the day. No other treatment, either for the varicocele or for the other morbid conditions of the genitals, is applied by the author. These morbid and irritable conditions of the genitals may, according to Dr. Ravoth, be successfully treated by truss-pressure even when there is no varicocele. He has never yet seen a case of testicular neuralgia in which there was no varicocele present, but thinks that in rare cases, such as those recorded by Sir A. Cooper and by Curling, in which there was neuralgia of the testicle unassociated with any apparent morbid condition of the spermatic cord or epididymis, truss-pressure, applied as in cases of varicocele, would prove successful in removing or relieving the pain.

VOLKMANN ON THE TREATMENT OF HYDROCELE.—Professor Volkmann reports (*Berliner Klinische Wochenschrift*, no. 3, 1876) seventeen cases of hydrocele treated by free incision of the sac under antiseptic conditions. There is not, according to the author, any better test of the efficacy of antiseptic surgery, than this proceeding of cutting into the sac of an hydrocele. Most surgeons are aware how severe is usually the reaction after this operation when performed in the ordinary way, how profuse is the resulting suppuration, and how slowly the healing processes are subsequently carried on. The almost constant cure of the patient in the course of a very few days, shown by the author's returns, indicates that, through the application of the antiseptic method in free incision of hydrocele, the processes of repair may be modified in a remarkable manner, and that healing may be effected perfectly and with almost inconceivable rapidity. The previously distended layer of the tunica vaginalis unites at once, the author states, with the surface of the testicle by primary adhesion, no local reaction takes place, the patient is able to leave his bed on the fifth or sixth day, and in the course of the second week he is quite well. The following are the details of the operative proceeding which is strongly recommended by Dr. Volkmann. During the operation and the subsequent dressings all the precautions insisted upon by Professor Lister must be rigorously observed. The genitals and inguinal regions are carefully and repeatedly washed with a solution of carbolic acid, and the skin of the pubic and perineal regions is closely shaved. Then, under the carbolic acid spray, the sac of the hydrocele is incised from the region of the external abdominal ring to the most dependent part of the affected side of the scrotum. The exposed and emptied cavity of the

tunica vaginalis is next syringed out with a three per cent. solution of carbolic acid, and the edges of this incised membrane are stitched carefully to the corresponding edges of the incised skin by fifteen, twenty, or even more sutures of very thin silk. All bleeding vessels are ligatured by fine carbolised catgut. The antiseptic dressing is applied closely and firmly so as to maintain the inner surface of the parietal layer of the tunica vaginalis in direct contact with the surface of the corresponding testicle, a small portion of this organ, however, being left exposed between the gaping edges of the incised wound. The prolonged action of the cold carbolic acid spray on the surface of the scrotum during the application of the sutures, and the repeated injection of a cold fluid into the sac of the hydrocele, cause considerable retraction of the dartos, so that this cavity becomes much reduced in size, and its membrane closely surrounds the testicle. In cases where the sac is very large and lax, and also in cases where there is much fibrous induration and sclerosis, it may be necessary to excise a portion of the tunica vaginalis. The most favourable cases are those in which the extent of the sac is so far reduced by the contraction of the scrotum that a small streak of the testicular surface is left distinctly visible between the edges of the wound. The introduction of a drainage-tube is not always necessary. In some cases, however, where the portion of tunica vaginalis forms an elongated funnel with valvular folds on its internal surfaces, a small drainage-tube should be passed as far as the front of the testicle. The blood having been removed from the seat of operation, the scrotum is surrounded by eight or nine strips of antiseptic gauze, and a large piece of gauze in eight layers with a corresponding slit in each layer for the passage of the penis is placed over these. This dressing is closely maintained in its place by a bandage of gauze saturated with carbolic acid. All gaps in this dressing are stopped with portions of salicylised wool, and a large pad of this material is placed in the perinæum between the anus and the scrotum. Absolute hermetical sealing of the wound is a necessary condition of total occlusion of the sac. On the first change of the dressing, the cavity will be found to be quite obstructed, and the wall of the hydrocele-cavity closely adherent to the surface of the testicle.

In all the seventeen cases in which this operation had been performed by Dr. Volkmann, cure was effected speedily and without the occurrence of phlegmon of the scrotum, diffuse suppuration, acute inflammatory cedema, or any kind of swelling of the skin of the scrotum. The importance of this fact, the author states, can be best appreciated by those surgeons who have had experience of cases where hydrocele had been incised without any antiseptic precautions having been taken. In such cases the reaction, both local and general, is almost always very severe. High fever and intense inflammatory swelling of the scrotum usually result, diffuse suppuration attacks the lax cellular tissue of the whole scrotum, the patient is kept to his bed for six or eight weeks, and during the first fortnight is often in a critical condition. In cases where the hydrocele is incised under the antiseptic spray, and the resulting wound dressed in the manner described by Volkmann, there is, according to this surgeon, little if any traumatic fever. The average duration of the treatment in his cases was ten days, and in sixteen out of the seventeen cases total obliteration of the sac had taken place on the third day after the operation.

REINER ON A CASE OF PENETRATING WOUND OF THE ABDOMEN.—Dr. J. Reiner reports (*Medicinisch-Chirurgisches Centralblatt*, no. 42, 1875), a case of a woman, aged twenty-six years, who had been attacked by a bull and severely wounded in the abdomen. The wound commenced on the left side of the linea alba, just above the mons Veneris, and terminated over the right ilium. It was eight inches in length, and five inches and a half in breadth, and involved throughout the whole thickness of the anterior abdominal wall. Through this wound the following structures had protruded; the pregnant uterus (the patient was in the fifth month of pregnancy), two-thirds of the omentum, and a considerable portion of the small intestine. The anterior wall of the uterus presented a large transverse wound, through which the fœtus with the placenta and membranes were discharged. The patient having been carefully removed to her home, and placed under the anæsthetic influence of a mixture of chloroform and ether, the exposed and protruding viscera were returned, and the edges of the wound brought together and retained in contact by pins and twisted sutures. Towards the termination of this operation the patient's condition became very critical, and there was much difficulty in restoring consciousness. Cold compresses were then applied over the lower part of the abdomen, and on the following day morphia was frequently administered in order to relieve pain. On the fifth day the integument, near the left angle of the wound, was marked by some isolated patches of a dark colour, which in the course of the two following days increased in size, and ran together so as to form a large slough, which separated on the thirteenth day, leaving a large orifice in the abdominal wall, through which intestine and omentum could be seen. The patient was feverish during this period, but seems to have presented no symptoms of peritonitis. On the twenty-third day the pulse was 80, the appetite good. The wound was then quite closed along two-thirds of its extent, and the ulcer near its left extremity had contracted very much, the corresponding portion of intestine and omentum being covered over by granulations. During the next fortnight the patient suffered from two large abscesses in the abdominal wall near the wound. Both these were allowed to open spontaneously. On the fiftieth day the ulcer on the left side was of the size of a kreuzer piece, and in its centre was a small orifice, through which passed at times menstrual fluid. Twenty days later the ulcer and orifice were closed, and eleven days after this, at eighty-two days after the injury, the recovery was complete. Menstruation has since taken place regularly, by the natural passage.

HÖNIGSCHMIED ON HERNIA MUSCULORUM.—A case of hernia of the biceps brachii muscle is reported by Dr. Ed. Hönigsmied of Weistrach (*Medicinisch-Chirurgisches Centralblatt*, no. 42, 1875). A muscular and healthy man, whilst lifting a heavy stone with both hands, heard a loud and sudden cracking noise in the left arm. No pain was felt at the time, but on examining the limb the man found that there was a large swelling midway between the elbow and shoulder. Dr. Hönigsmied saw the case soon after the accident, and then observed on the anterior and inner surfaces of the left arm, and in its middle third, a rounded and well defined tumour, of the size of a man's fist, with a broad base, firm and

elastic and immovable. The superjacent skin could be raised from the tumour in folds, and presented no appearance of sagulation. Movements, both passive and active, of the limb could be freely performed; and beyond a feeling of fatigue when the fore-arm was flexed, the function of the limb was not impaired. From these appearances, and the history of the case, the author at once diagnosed it as one of hernia musculorum, and assumed that with the exertion of the arm laceration of the humeral fascia had taken place, and, as a consequence of this laceration, protrusion of the biceps brachii muscle. There was no necessity in this case for establishing a differential diagnosis which, in any instance of this lesion, could only take into consideration some form of tumour. Here the sudden origin and the appearance of the swelling excluded all doubt as to its real character. Tincture of arnica was applied to the swelling, and the man advised to keep his arm at rest. He did not carry out the treatment for many days, but soon worked again as a bricklayer, when he found that he was able to use his left arm very effectually, without experiencing pain, and beyond some slight fatigue, any impairment of function. He noticed that when he was resting in bed the tumour always became much smaller, but that it soon regained its former size when the arm was moved, and whilst he was dressing. According to Dr. Neudörfer, hernia musculorum in most cases is attended with much pain, and causes much impairment of function, and even renders, for a time, the limb immovable and useless. The best treatment, according to this surgeon, is prolonged rest of the limb, and confinement of it in some form of fixed bandage.

W. JOHNSON SMITH.

REEVE ON THE ADMINISTRATION OF CHLOROFORM.—Dr. Reeve, in the *Cincinnati Clinic*, quoted in the *Canada Lancet* for Jan. 1, makes the following remarks. 'There is one stage of the anæsthetic process—a stage especially well marked in robust males—during which the inhalation should be slowly carried on, for it is a stage of special danger. I allude to the struggling stage. You have all seen it doubtless, and must have marked how respiration is interfered with—slow, jerking, or for a time entirely suspended. Over this stage always go slowly. Remember the residual air of respiration—the amount of air always in the lungs, not undergoing tidal movement. It may amount to as much as 250 cubic inches, which, if saturated with chloroform vapour at the temperature of 66° Fahr., would contain the vapour of 30 minims, or nearly twice as much as the average quantity present in the blood of an adult when sufficiently insensible for a surgical operation. That the air is not saturated, and generally not half saturated, is the reason why we do not hear of still more accidents. You will readily understand that this vapour of the residual air is being absorbed even if respiration is entirely suspended, and now if you mark that at the close of this stage, the patient usually draws several deep inspirations, you can see how easy it may be to give an overdose. Keep in mind then the residual air of the lungs during the administration of chloroform, and especially during the stage of struggling.'

W. DOUGLAS HEMMING.

CORRADI ON A CASE OF EXTIRPATION OF THE PAROTID GLAND.—In the *Bulletino delle Scienze Mediche di Bologna* (quoted in *Gazzetta Medica*

Italiana-Lombardia, February 12) is related a case in which extirpation of the parotid gland was performed by Professor Corradi, of Florence.

The patient was a man aged fifty-eight, a Government *employé*, the son of healthy parents. In March 1874, he first felt lancinating pains in the region of the left ear, which gradually spread over the side of the head. He was at first believed to have otitis, and was treated by leeches, ointment of iodide of lead, and a blister to the nape of the neck. When seen at a later date by Dr. Corradi, he was found to have a tumour of the parotid. On his admission into hospital, sensation and temperature were quite normal on the affected side. The left palpebral aperture was a little larger than the right; the left angle of the mouth deviated somewhat towards the middle line, and when he opened his mouth the motor paralysis was still more apparent. In opening his mouth he felt an impediment between the jaw and ear. Deglutition was normal, and no swelling was seen in the mouth or pharynx.

The operation was performed on December 11, 1874. Chloroform was not given, as the patient refused it. The jaw having been carried forward as far as possible, a vertical incision was made from the zygoma to just below the angle of the jaw, passing about a centimètre in front of the ear; a second smaller incision was made transversely from the lower angle of the masseter muscle along the lower border of the jaw as far as the mastoid process. The flaps were dissected up with a knife heated to whiteness by electricity, and the gland was detached from below upwards. When the styloid process was reached, the patient said that he could not close his left eyelid, indicating lesion of the facial nerve. Towards the end of the dissection, the external carotid artery was exposed; two ligatures were tied on it, and it was divided. The cavity was filled with cotton-wool. The operation lasted thirty-five minutes.

At the end of December the wound had healed, but the local paralysis remained. There was some swelling of the left side of the neck, indicating a return of the disease, which had been found on microscopic examination to be scirrhus.

A. HENRY, M.D.

ANDREWS ON DISLOCATION OF THE RADIUS AND ULNA OUTWARDS.—Dr. W. C. C. Andrews, of the Resident Surgical Staff of Bellevue Hospital, records the following case in the *New York Medical Record* for October 9. He says that it is one of the first, if not the first, of its kind reported by an American surgeon. Gustave S., aged seventeen, an engraver, was admitted to Ward Eleven on August 12, 1875. Two hours before, the patient fell from a shed (eight feet) on a manure-heap, which covered a pile of stones, and was about one foot thick. The patient said that he struck upon his right side, the right arm lying beside and partly under him—the elbow being straight or nearly so. The elbow must have been flexed at least 30° to allow such a dislocation without fracture of the olecranon.

Examination immediately after admission showed a very characteristic deformity. The forearm was at nearly a right angle with the arm, the hand resting upon the thumb in a position of forced pronation. The abrupt bulging of the forearm forwards and outwards was very marked. Both the biceps and triceps were uncontracted and flaccid. Externally the olecranon was easily felt, the finger slipping over its convexity and dropping into the sigmoid cavity.

This alone seemed to exclude fracture of the process; and the relaxed triceps, without any chip of bone in its substance, confirmed the supposition. Above, and to the inner side of the ulna, the round head of the radius was plainly felt, and rotated normally within the lesser sigmoid cavity when the hand was supinated. Projecting very strongly upon the inner side of the joint, and on a plane with the flattened posterior face of the arm, was the inner condyle. Both the epitrochlear process and the trochlear surface were distinctly felt, and the absence of fracture here was easily shown. The outer condyle lay deeply beneath the head of the radius, and could only be detected upon firm pressure. Indications of fracture were carefully sought for (both now and on other occasions), but could not be obtained.

The soft parts seemed to have escaped injury, excepting the capsular and lateral ligaments. There was but little swelling, no ecchymosis, and no appearance of rupture of muscles. The hand was warm, and did not feel numb nor sleepy. Good pulsation existed in both the radial and ulnar arteries. The arm was laid comfortably in an open wire splint, and lead and opium applied.

On August 13 the patient was thoroughly etherised to produce complete muscular relaxation. An assistant made counter-extension from the humerus, another grasped the forearm with his thumbs against the olecranon, the hand was then supinated and the forearm made nearly straight with the arm. Extension followed, during which the elbow was gradually flexed and olecranon pressed inwards, when both bones slipped readily into place. Very little force was used. Reduction was accompanied by the usual soft snapping between the articular surfaces. All the normal motions of the joint were restored and perfect, though somewhat loose. The head of the radius seemed very prominent and free in its movements, although it had always retained its natural relations to the ulna. The arm was replaced in a sling, and the lead and opium wash continued. The subsequent progress of the case presents nothing unusual. The patient left the hospital, with the motions of the part nearly perfect, on August 30.

RECENT PAPERS.

- Lithiasis Præputii. By Dr. M. Schäffer. (*Deutsche Medicinische Wochenschrift*, March 25.)
 Splints of Plaster of Paris and Soluble Glass. By Dr. Bartscher. (*Ibid.*, March 18.)
 Experiments with Benzozated Dressings. By Dr. P. Kreske. (*Ibid.*, March 11.)
 Cirsoid Aneurism of the Head. By Dr. Wernher. (*Berliner Klinische Wochenschrift*, March 27.)
 Diagnosis of Ulcerations of the Tongue. By M. J. Duplay. (*Le Progrès Médical*, March 25.)
 On Antiseptic Surgery. By Dr. Duplay. (*Archives Générales de Médecine*, April, 1876.)
 Hysterical Appearances, simulating Serious Lesions of the Hip and Abdomen. By M. Trélat. (*L'Union Médicale*, April 1.)
 On Lister's Antiseptic Method. By Dr. Petit. (*Bulletin Général de Thérapeutique*, March 30.)
 On the Right Moment for Tracheotomy in Croup. By Dr. Michalski. (*L'Union Médicale*, March 25.)
 On the Diagnosis of Hydrocele of the Tunica Vaginalis and its Treatment. By M. André Martin. (*Mouvement Médical*, March 18 and 25.)

DISEASES OF CHILDREN.

ULTZMANN ON ENURESIS.—At a meeting of the Medical Society of Lower Austria, Dr. R. Ultzmann made remarks upon the treatment of enuresis in children (*Allgemeine Wiener Medicinische Zeitung*, quoted in *Boston Medical and Surgical Journal*, February 10, 1876). Inability to hold the urine is not a rare occurrence in children. Boys are observed more frequently than girls with this affection, for the reason that the latter are more apt to conceal the fact. At first, owing to the weakness of the sphincter muscles, the discharge of fæces and of urine occurs without the experience of any sensation on the part of the infant. It is only after the tenth or twelfth month that any sensation accompanies the act; and we cannot properly speak of enuresis of a child under two years of age.

Urinary calculus is a frequent affection of childhood, and, as is well known, has its origin in the uric acid infarctus of new-born children, the small renal calculus descending into the bladder and there becoming the nucleus of a vesical calculus. This lithiasis, as well as cystitis, purulent pyelitis, polypoid growths, etc., can coexist with incontinence of urine; so that in these cases the urine should always be examined, in order, before making a diagnosis of enuresis, to exclude these other affections.

The disease in question can be divided into enuresis diurna and enuresis nocturna; and if it manifest itself day and night, Ultzmann calls it enuresis continua. It can make its appearance regularly or periodically. It is not confined, as asserted by some, to the scrofulous, rachitic, or to those affected by worms, etc., but is often found in children of healthy robust constitutions. Sleeping too soundly has been assigned as a cause; but only healthy children sleep long and continuously. Trousseau speaks of a too violent contraction of the neck of the bladder, others of a hyperæsthesia of the mucous membrane of the bladder.

According to Dr. Ultzmann's views, the cause is to be found in an absence of the proper relation between the detrusor and the sphincter muscles; the latter is weakened, and consequently the action of the former preponderates. At night, when volition ceases to exercise any control, this affection, when there exists a predisposition to it, manifests itself.

The treatment recommended is based upon this theory, and consists in measures to strengthen the sphincter muscle. The remedy employed, which is not alleged to be new, is the induced current, the method of its employment being a modified one. It was formerly the custom to apply one pole through the urethra to the prostatic portion, which is a very difficult proceeding with infants, owing to the narrowness of the urethra. This operation, however, is not always free from danger, and is, moreover, liable to cause urethritis or cystitis. The urine often becomes decomposed, and the patient is consequently made worse.

During the last two years Dr. Ultzmann has been in the habit of applying the induced current indirectly to the neck of the bladder by placing in the rectum or vagina a thin rod of brass, the end of which is connected with one pole, while the other is applied to the pubes or thigh. Each application lasts from five to ten minutes, and is made daily. The duration of treatment extends from four to six weeks.

Of nine cases thus treated (five girls and four boys) there was a decided improvement in all. The enuresis continua became in a short time a nocturnal one, and the enuresis diurna a periodical one. Four cases were completely cured. In four cases there was a relapse, but on resuming treatment recovery always followed. Of the nine reported cases three were brothers, respectively five, six, and eight years old. These three were much improved by the treatment.

The same treatment has proved very beneficial also in adults, especially in women when the incontinence has followed severe confinements, two such cases having come under treatment.

The good result of this treatment is explained anatomically by the fact that the nerves of the rectum are the hæmorrhoides medius et inferior, which come from the plexus pudendalis and sacro-coccygeus. These nerves supply also the bladder, and consequently the muscular contractility of the latter is thus excited.

Dr. Fleischmann remarked that he had experienced equally extraordinary results with this treatment in the case of a half-idiot boy who had a continual incontinence of both urine and fæces day and night. He recommended, however, that in the case of girls the metal rod be always introduced into the rectum, and not into the vagina, as there was no urgent necessity of placing it in the latter. With regard to internal treatment, he had seen excellent results from the use of belladonna. After the patient had taken from five to six grammes (four to five scruples) complete recovery had taken place, and no relapses. When, therefore, success did not follow the use of electricity, he recommended a trial of belladonna or strychnine.

Dr. Winternitz had observed a disappearance of this disease take place coincidently with an outbreak of eczema on the nates, and in addition recommended cold-water irrigation by means of Atzberg's apparatus.

MATERIA MEDICA AND THERAPEUTICS.

JACOBS ON THE TREATMENT OF DIABETES BY GLYCERINE.—In Virchow's *Archiv*, Band lxx. Heft 4), is an article by Dr. Julius Jacobs on the treatment of diabetes by glycerine. Various authors are quoted as having used this drug with good effect, and Schultze's theory of its action is alluded to, viz., that diabetics are deprived of their respiration material by the excretion of sugar, and are therefore obliged to consume their fat and protein compounds; but that when glycerine, which cannot be converted into sugar in the animal economy, is administered, carbonic acid and water are formed and respiration maintained without any calls upon the body-tissues. Two forms of diabetes are referred to; that in which a judicious diet is sufficient for a cure; and that in which neither medicine nor diet avail much. Of the latter kind, two cases are given in the paper, with tables of the daily analysis of the urine. Under the treatment by glycerine the patients are said to have remained perfectly free from the gastric and intestinal catarrh, and the resulting anorexia, vomiting, etc.

In the first case the diet was restricted to animal food, eggs, greens, chocolate, coffee, and tea. But the patient was allowed about five ounces of wheat

bread *per diem* during some part of the time. He was ordered Schultze's prescription, viz. glycerine 25 grammes, powdered tartaric acid 5 grammes, water 700 grammes in the twenty-four hours. The sugar decreased somewhat in quantity, but the specific gravity remained at 1050 to 1060. The body-weight remained stationary.

In the other case also the sugar undoubtedly diminished in quantity under the administration of the glycerine with a restricted diet. Dr. Jacobs, however, thinks that the improvement was not due to the latter, for that alone had failed on a former occasion to relieve his first patient.

The writer concludes that no remedies yet known can cure diabetes. Some can alleviate symptoms and prolong life. Glycerine is one of these, if its administration be persisted with. The grounds of his faith are these: that with its use the quantity of sugar and of urine excreted diminishes, the thirst lessens, and there is no diarrhoea; that the patient improves in general health; and that if he do not gain in weight he at any rate does not lose.

It is, however, stated with perfect candour that on each and all of these points Kulz, from the observation of other cases, has formed a directly contradictory opinion. The author lays some stress upon the fact that the specific gravity of the excreted urine varied inversely as the quantity of sugar. So constantly was this the case that he could say from the increase of the specific gravity that the sugar had decreased. The explanation given of this is that, by the administration of glycerine, the sugar is converted into something else of a greater specific gravity and giving no reaction with copper, and that this new substance being excreted by the urine keeps up its specific gravity.

[These two cases can hardly be taken to prove, as the author would appear to think, the value of glycerine in diabetes; and English physicians would, we think, be inclined to agree with Kulz. Dr. Pavy has found the remedy worse than useless, and the quantity of sugar increased under its administration. Moreover, that their specific gravity remained very constantly at 1060°, reaching in one to 1070°, would suffice to show that these cases were most exceptional.—*Rep.*] J. F. GOODHART, M.D.

ABRAMOWSKI ON THE ACTION OF THE FARADIC CURRENT IN ACUTE RHEUMATISM.—In the *Berliner Klin. Wochens.* for February, 1876, Dr. Abramowski records the results of experiments with the faradic current in fourteen cases of the disease. He made use of the electric brush, either placing the moistened positive pole on the sternum, and the negative pole, armed with the brush, on the skin of the affected joint, or connecting both wires with the galvanic circuit and placing their terminations lightly upon the joint at a constant distance of one centimètre from one another. For therapeutical purposes he always employed the former method. With regard to the electro-sensibility in rheumatism, he found that this was always increased over the diseased joints, in opposition to von Drosdek, who has stated (*Centralblatt für die Med. Wissenschaft.*) that the sensibility to the electric current is much diminished or almost lost. Therapeutically, the application of the induced current proved of great service. The diseased joints were faradised between ten and eleven in the morning; each sitting lasted ten to fifteen minutes, and the results were mostly noted at four in the afternoon.

By this time in many cases the pain was entirely relieved, so that patients who previously shrank from the slightest movement, were able to move the arms and legs freely. In other cases, from the notes appended, it would appear that relief was not so rapid, but it was seldom delayed beyond a day. The average length of time required for treatment by this method was ten days. The temperature rose and fell with the increase and diminution of the local symptoms, but no decided conclusions could be drawn from the cases as to the influence of the treatment upon the occurrence of cardiac complications. Though permanent improvement was obtained only after several sittings, the author is inclined to rate very highly the relief which almost always occurs, commencing soon after faradisation, and lasting at least some hours.

FÜRSTNER ON THE USE OF THE INDUCED CURRENT IN CERTAIN FORMS OF DILATION OF THE STOMACH.—In the *Berliner Klin. Wochens.* for March 13, 1876, Dr. Fürstner describes three cases in which the induced current was used successfully for the relief of distension of the stomach. The patients were all young females, aged respectively twenty-one, thirteen, and twenty. The first, without any evident hereditary tendency to nervous diseases, had been well till her seventeenth year, when she received a blow on the epigastrium, which was followed at once by intense pain, and somewhat later by a convulsive attack with loss of consciousness. The pain continued, the gastric region swelled, and frequent vomiting afforded no relief. After four days these symptoms subsided, but convulsive attacks recurred frequently and in the intervals there were headaches, and violent pains in the epigastrium. The fits were preceded or followed by the above-mentioned gastric symptoms, which often lasted several days, without, however, leading to any particular disturbance of the general health. When she came under notice, the abdomen was much distended, tense, and painful; and the lower convex border of the stomach was distinctly indicated on the surface of the abdomen about four-fifths of an inch above the navel. Convulsive attacks of a hystero-epileptic character were frequent during her stay in hospital, and were ushered in by a vague sensation of pressure and tenderness in the gastric region. No benefit was obtained from the use of ice, from morphia injections, or from washing out the stomach. A moderately strong induced current was then applied, one moist electrode being held on the left hypochondrium, the other placed over the stomach, and drawn with considerable pressure from cardia to pylorus. The result was constant: after a short time the swelling diminished, the pain ceased, and at the end of the proceedings the return of the stomach to its normal limits could be demonstrated by percussion. This distension did not recur for hours, sometimes not for days, and was always again easily reduced by the same treatment.

The second case was similar, the patient having fainted and struck her abdomen in the fall. On returning to consciousness she complained of burning pain in the stomach, and two hours later had her first convulsive attack, soon after which distension of the abdomen with repeated vomiting, occurred. The gastric symptoms recurred at irregular intervals either preceding, accompanying, or following the fits, often however appearing alone. She frequently vomited, and complained of an excessively tender

spot at the epigastrium. In the third case, again, a blow on the epigastrium caused intense burning pain, with vomiting, and distension of the abdomen, followed in the evening by general convulsions. The fits were repeated three times, on each occasion accompanied by gastric symptoms, and the patient, on admission, presented a condition similar to that observed in the second case. In the intervals of the attacks she suffered frequently from periodical headaches which she had had from childhood, and occasionally from left pleurodynia. In all three cases are to be observed the rapid development of hysterical symptoms from a blow, the periodical fits preceded by distension of the stomach, and the marked relief of the latter by faradisation. The author attributes the result to contraction of the walls of the stomach caused by direct, and not by reflex irritation; since in several patients, whose stomachs he artificially distended with carbonic acid gas, he found that the swelling was more easily reduced by the firm application of moist electrodes, than when the skin was more directly irritated by a dry metallic brush. He suggests the use of the induced current in other forms of dilated and distended stomach.

F. TAYLOR, M.D.

ROBERTS ON THE USE OF TURPENTINE IN TONSILLITIS.—In the *Philadelphia Medical Times* Dr. S. H. Roberts strongly recommends the external use of turpentine in tonsillitis. He applies it as follows. A flannel folded in four thicknesses is wrung out in hot water, and oil of turpentine poured over a spot about the size of a crown-piece. The flannel is then applied over the subparotid region and the fomentation continued as long as it can be borne. After its removal a dry flannel is applied, and turpentine rubbed over the same region every two hours. Dr. Roberts believes that turpentine has a specific effect in tonsillitis; he has proved that its action is not merely that of an irritant, by employing in its place mustard, croton-oil, tincture of iodine, etc., none of which had the effect of diminishing the inflammation of the tonsils which the turpentine had.

WHITTAKER ON HYPODERMIC ALIMENTATION.—Dr. Whittaker relates, in the *Cincinnati Clinic*, a case in which a patient's life was apparently saved by the hypodermic injection of nutrient fluids. The patient suffered from persistent vomiting and irritability of the rectum, which prevented any nourishment being retained in either the stomach or bowels, and death from exhaustion was imminent. Dr. Whittaker then commenced to administer beef-tea and milk hypodermically every two hours, in teaspoonfuls. These were continued three days, and then cod-liver oil was used in the place of milk. The patient improved rapidly and made a good recovery. The injections of milk caused small abscesses, but no inconvenience resulted from the use of the cod-liver oil.

BOMPART ON THE CURE OF TETANUS BY JABORANDI.—In *L'Union Médicale* for March 7 (quoted in *Paris Médical*, March 16) Dr. Bompert, of Vitry-le-Français, narrates a case of commencing tetanus cured by jaborandi. A woman aged sixty-two was operated upon for cancer of the left breast on December 26 last. On January 6 she had rigors, on the 9th dysphagia, which increased to very well marked trismus. It was impossible to make the patient take any solid food. The two most urgent indications were to feed the patient and treat the

tetanus. The first indication was fulfilled by means of clysters of eggs, broth, and wine; black coffee, and some spoonful of the *elixir alimentaire de Ducro*, (alcohol holding the soluble principles of meat in solution). For the tetanus M. Bompert had administered enemata of hydrate of chloral, which was immediately rejected and consequently produced no effect. M. Bompert attributes the cure to the action of jaborandi administered as follows: four grammes of the pounded leaves made into an infusion. The patient took the same dose daily from January 23 to March 3, at which date every symptom of tetanus had completely disappeared. The jaborandi produced very abundant salivation. Half a glass to a glass a day produced considerable perspiration.

DA COSTA ON SALICYLIC ACID IN FOUL BREATH AND OFFENSIVE EXPECTORATION.—In the *Medical and Surgical Reporter*, quoted in *Canada Lancet*, March 1, 1876, Dr. da Costa, of Philadelphia, recommends salicylic acid as a preventive of the foul breath and offensive expectoration of consumptive patients. He administers it in five-grain doses, with one drachm of glycerine in half an ounce of water, three times a day. He finds that it modifies the offensiveness of the breath to a very great extent, and also, though in a lesser degree, changes the offensive character of the expectoration. It is also useful in fetid bronchitis. The solubility of the salicylic acid may be increased by the addition of a little borax.

BURRALL ON A METHOD OF ADMINISTERING FLUIDS WHEN THE JAWS ARE FIRMLY CLOSED.—Dr. F. A. Burrall of New York (*New York Medical Record*, February 19, 1876), says a simple examination, which any one can easily make of his own buccal cavity, will show that posterior to the last molar tooth, when the jaws are closed, is an opening bounded by the molars, the body of the superior and the ramus of the inferior maxilla. If, on either side, the cheek be held well out from the jaw, a pocket or gutter is formed, into which fluids may be poured, and they will pass into the mouth through the opening behind the molars, as well as through the interstices between the teeth. When in the mouth they tend to create a disposition to swallow, and by this method a considerable quantity of liquid may be promptly given. Dr. Burrall has used this plan for some time with success, and quotes one of the cases. He does not find that liquids thus administered run into the larynx.

W. DOUGLAS HEMMING.

CRAIG ON CHLORAL AS A DRESSING FOR WOUNDS AND ULCERS.—In an article on the external uses of hydrate of chloral in the *Edinburgh Medical Journal* for February, Dr. W. Craig says that he has tried chloral extensively as an external application to wounds and abraded surfaces. He found as the result of experiments that a lotion containing from 5 to 15 grains of the hydrate of chloral to the ounce of water formed an excellent dressing to ulcers and wounds, dressed with lint and gutta-percha in the ordinary manner. He also used chloral solution as an injection into the sacs of large abscesses, and found that it tended much to diminish secretion and make the parts heal. He found it also an useful lotion for the eye in inflammatory conditions of that organ. It is an excellent application to burns, and very specially where there is a fetid discharge. He also found it a good application to remove warts

from the hands and fingers. He used for this purpose a lotion containing 15 or 20 grains to the ounce of water, applied by means of lint and gutta-percha. It causes no pain, and the wart speedily becomes smaller, and gradually disappears.

He also used it as a lotion to sore nipples and to inflamed mucous membranes. When chloral is applied to an ulcer, a wound, or to the interior of an abscess sac, it causes at first some smarting, but that only lasts for a few minutes, and is soon succeeded by a most agreeable sensation. Patients so treated have frequently told him that soon after the lotion was applied a very agreeable soothing effect was felt in the wound. Wherever there is a wound or ulcer there is irritability of the nerves of that part; and chloral, by soothing this irritability of the nerves, favours the healing process.

He has frequently used with good effect an ointment containing 30 to 60 grains of the hydrate of chloral to the ounce in eczema and other allied affections. He believed it to be one of the best applications in such diseases; and a medical practitioner lately told him that he had used it with marked benefit as a local application during an attack of erysipelas of the head. Chloral in various forms has been extensively used in the Edinburgh Royal Infirmary by Dr. P. H. Watson, who regards it as a valuable antiseptic, as active as carbolic acid or boracic acid.

SOLUTION OF BROMINE AS DRESSING.—The *New York Medical Journal*, for February, states that at the Bellevue Hospital a valuable stimulating application is obtained by dissolving two drachms of bromine in a pint of water. The use of bromine in a dilute form is rather a novel method, and it seems to offer some advantages.

DISLOCATION OF THE HEAD OF THE TIBIA FORWARD.—At the Roosevelt Hospital (*New York Medical Journal*, February) a rare case of dislocation of the head of the tibia has been under treatment. The injury was received by a force acting directly from behind. There was no fracture of the patella nor rupture of the ligament of the patella. The dislocation was readily reduced, and after a week the extremity put up in a water-glass bandage. Eight weeks after the accident the patient had so far improved as to walk about with but little difficulty, and with considerable motion of the knee-joint.

TREATMENT OF ACUTE RHEUMATISM BY PACKING WITH CARBOLIC ACID.—In the report of cases at St. Francis's Hospital in the *New York Medical Journal* for February, it is stated that several cases of acute rheumatism have been satisfactorily treated by means of packing with blankets wrung out of a very dilute solution of carbolic acid. The treatment is, in reality, a modification of the method practised at the Mount Sinai Hospital, and reported some few months ago. The method consists in adding an ounce of carbolic acid to a pailful of warm water, and saturating blankets with the solution before applying them. Marked relief follows the application.

TREATMENT OF DYSENTERY WITH SALICYLIC ACID.—The *New York Medical Journal* for February, in its notes of hospital practice, states that at St. Francis's Hospital cases of acute dysentery have been treated satisfactorily by means of doses of thirty grains of salicylic acid administered three

times a day. The only objection to the remedy appears to be a slight irritation of the stomach, but this is not sufficient to cause emesis.

TREATMENT OF METRORRHAGIA BY THE GALVANIC CAUTERY APPLIED TO THE INSIDE OF THE UTERUS.—A patient at the Mount Sinai Hospital (*New York Medical Journal*, February), developed persistent flow of blood from the uterus after an abortion, which was unsatisfactorily treated by all the ordinary agents. Persulphate of iron applied to the lining membrane of the uterus proved but of little benefit. Dr. A. Jacobi used the galvano-caustic apparatus, and found that after its use the metrorrhagia ceased. Previously to this the hæmorrhage had continued for eight weeks, and debilitated the patient to a marked degree.

TREATMENT OF BURNS.—At the Charity Hospital (*New York Medical Journal*, February), in the treatment of burns, when of a superficial character, a preparation consisting of two parts of collodion and one of olive-oil has been found to be very efficacious. When the burn is of an extensive character, gasoline proves of decided benefit. The advantage of gasoline is, that it is of the right consistence, and does not become rancid.

GELLÉ ON THE USE OF CHLORAL IN PRURITUS OF THE VULVA.—Chloral has been already recommended in pruritus of the vulva. Some facts mentioned by Dr. Gellé (*Tribune Méd.* December, 1875), give fresh support to this mode of treatment. M. Gellé has employed a solution of one in ten, as a lotion several times a day. A plug of cotton soaked in the solution can, as a further measure, be placed within the labia majora; the itchiness quickly becomes less, and at the end of a fortnight has completely disappeared.

DUQUESNEL ON THE PREPARATION OF POINTS OF TANNIN, ALUM, ETC.—The greater part of the points intended to be introduced within the cervix uteri are composed of a mixture of gum, bread-crumbs, etc., and certain medicinal substances. They possess, however, even after the addition of a small quantity of glycerine, a brittleness which is extremely inconvenient. M. Duquesnel (*Annales de Gynécologie*, January, 1876), uses gutta percha as a vehicle; the points are thus, when the temperature is slightly raised, rendered flexible, and are at the same time sufficiently tough and elastic.

An iron or copper vessel is to be heated over gas, and when raised to a temperature of about 100° Cent. equal parts of gutta percha, in small pieces, and the medicinal substance, viz., tannin, oxide of zinc, alum, etc., are to be placed in it. The two substances are intimately mixed, and, with the aid of glass or metal plates, are rolled into cylindrical form. When these points are in contact with numerous surfaces, they part with a portion of the medicated principle they contain.

LITTON FORBES, M.D.

RECENT PAPERS.

On Pilocarpine. By M. E. Ferrand. (*La France Médicale*, February 9.)

Classification of Drugs. By Dr. Sée. (*Le Mouvement Médical*, February 19.)

Kava-Kava in Blennorrhagia. By Dr. Edward Dupouy. (*Journal de Thérapeutique*, February 25.)

Eucalyptus and Cancer. By M. Luton. (*Le Mouvement Médical*, March 4.)

Notice of new Hydropathic Establishment at Gérardmer, with a Clinical Account of the Cases treated there. By Dr. Greuell. (*Revue Médicale de l'Est*, March 1.)

On the Use of Ice in Hysteria and Epilepsy. By Dr. Bourneville. (*Le Progrès Médical*, March 18.)

On the Treatment of Generalised Acute Articular Rheumatism by Salicylic Acid. By Dr. Stricker. (*Bulletin Général de Thérapeutique*, March 30.)

Treatment of Varicose Ulcers by the Solution of Lactate of Iron and Potash. By Dr. Bourguignon. (*L'Union Médicale*, March 30.)

Use of Chloral in Oozena. By M. Créquy, (*Ibid.* March 21.)

On the Abuse of Hypodermic Injections of Morphia. By M. Trélat. (*Ibid.*)

On the Physiological Action of Nitrite of Amyl and its Use in the Treatment of Epilepsy. By Dr. Bourneville. (*Gazette Médicale de Paris*, March 25.)

The Hypodermic Injection of Morphia in Insanity. By Mr. McDiarmid. (*Journal of Mental Science*, April, 1876.)

PSYCHOLOGY.

VOISIN ON THE SUBCUTANEOUS INJECTION OF SHEEP'S BLOOD IN THE INSANE.—At the meeting of the Société de Médecine Pratique on November 13 (*Paris Médical*, February, 10, 1876), Dr. Voisin read a paper on this subject. The method of treatment is not directed against the mental state, but is intended to keep up nutrition in sufferers from melancholia considered as incurable. Dr. Voisin mentioned two cases in which sheep's blood was injected, both being women, one aged forty-nine, the other forty-four, and both suffering from hypochondriasis, delusions of persecution, riches, etc. In the first case fifty grammes of blood from the jugular vein of a sheep were injected into the subcutaneous cellular tissue of the arm. This was repeated every eighth day. According to Dr. Voisin, this method is recommended by Karst, and declared inoffensive by Landerberger, Poncet, and Ponza. It should be of use in patients whose cachexia is tending to a fatal termination. W. DOUGLAS HEMMING.

HITZIG ON THE AIMS AND OBJECTS OF PSYCHOLOGY.—In a published address entitled 'Ziele und Zwecke der Psychiatrie,' and delivered in the University of Zürich, Professor Edward Hitzig gives his opinions on several points which are subjects of controversy at the present day. The body of the address consists of an excellent view of the well-known causes which influence the onset, duration, and results of attacks of insanity, together with a statement of facts concerning lunacy, suited to a lay audience, and which, therefore, need not be noticed here.

The author thinks that civilisation more than atones for the extra strain of work and pleasure which she imposes, by the increased comforts and protection she affords to even the lowest of the people. Owing to the large proportion of cases of insanity which, though not incurable at first, rapidly become so if not cured, preventive measures are of greater relative importance in lunacy than in general medicine. Religious fanaticism is, too, regarded as a very frequent exciting cause of insanity; the consolations of true religion can harm none, and merit, instead of a lukewarm toleration, our highest regard; but as different as poison from medicine is fanaticism from religion. Numerous examples are

quoted where so-called religious movements have either arisen directly out of insanity or have rapidly led to it. It is especially on the hereditarily predisposed that such disturbing influences as the above are most potent for evil; hold constantly before weak minds the two dark themes of eternity and damnation, then present to them, as an antidote to the spiritual trembling you have caused, mystic sensational pictures of love, and beware what will become of the minds of your hearers.

With regard to consanguineous marriages, the author says that, provided the family be healthy, and admixture of fresh blood has previously regularly taken place, an occasional marriage of near relations is not productive of harm; but that if there be insanity in the family, the union of two branches, in each of which it has perhaps lain dormant, is exceedingly likely to cause a fresh outbreak. He also complains that medical opinion is not more frequently sought and acted upon as to the suitability of marriages. After dilating upon the evils of intemperance, Hitzig recommends that habitual drunkards should be detained under care and treatment for certain limited periods of time, especially after recovery from attacks of delirium tremens or other forms of insanity, that they may thus acquire greater strength of will to resist temptation in future, and that this proceeding should be sanctioned by law. He specially advocates the higher education of the people, the improvement of their homes that they may resort less to places of public refreshment, and the establishment of suitable institutions, where those who have no comfortable homes may pass their leisure hours. It is urged that psychological medicine should be made a compulsory subject of examination for all legal qualifications to practice, and that young medical men should be encouraged to spend limited periods of time as resident assistants in asylums before entering on general practice; also that stringent measures ought to be taken by the State to bring all cases of insanity early under treatment, with a view to curing a much larger proportion than obtains at present.

CHAS. S. W. COBBOLD, M.D.

RECENT PAPERS.

On Litigious Maniacs. By Dr. Taguet. (*Annales Médico-Psychologiques*, January, 1876).

The Heredity and Psychological Contagiousness of Stammering. By Dr. R. Coën. (*Allgemeine Wiener Medizinische Zeitung*, March 21.)

OBSTETRICS AND GYNÆCOLOGY.

STIEBELING ON A CASE OF PRESENTATION OF FOUR HANDS.—Dr. George C. Stiebeling, of New York, states (*New York Medical Journal*, February) that on November 4, 1875, he was called to see Mrs. M. S., aged twenty-four, secundipara. She had been in labour for about five hours. However, on examination, he felt through the bag of waters what later he could discern distinctly as hands. As the os uteri was dilated enough to allow the introduction of his hand, he resolved to perform version and extraction. On breaking the bag of waters, he met two hands, and going a little higher up in search of a foot he met two more hands. Soon he found two heads, one to the right, and the other to the left. He now got hold of a foot, brought it down without

difficulty, and extricated one child, a boy. The second one was delivered in the same manner, also a boy; both crying lustily. The mother and children did well.

BARKER ON THE DIAGNOSIS BETWEEN PELVIC HÆMATOCELE AND PELVIC CELLULITIS.—A clinical lecture by Dr. Fordyce Barker of New York, published in the *Richmond and Louisville Medical Journal*, for January, concludes with the following remarks on diagnosis. Pelvic cellulitis and pelvic hæmatocele both have their seat in the pelvic cavity immediately in contact with the uterus; in both there is the development of a tumour in the pelvic cavity; in both there is a certain amount of pelvic peritonitis, which results in uterine adhesions, and both originate in some predisposing disturbance of the uterus or its appendages.

While the two diseases have these marked features of resemblance, there are many symptoms radically different. Hæmatocele is usually associated with some catamenial disturbance, and in some rare instances with abortion; but never is the result of parturition. Cellulitis is frequently a disease of the puerperal period, or a consequence of abortion, or of any inflammation of the organs within the pelvic cavity. Hæmatocele is frequently ushered in or attended with uterine hæmorrhage. This rarely, if ever, occurs in connection with cellulitis.

In hæmatocele, the pelvic tumour is formed rapidly; that is, ordinarily in a few hours. In cellulitis, the development of the tumour is a process of days.

In hæmatocele, the tumour is, at first, yielding, elastic, and gradually becomes harder in proportion to the lapse of time from the period of extravasation. The tumour in cellulitis is hard in the beginning of its formation, and gradually softens. In hæmatocele, the formation of the tumour is the beginning of the disease. In cellulitis, it is the result of an antecedent inflammation. In hæmatocele, the tumour is distinct from the uterus; its volume is considerable; it displaces the uterus laterally and anteriorly, so that the os is directed backward. In cellulitis, the tumour apparently belongs to the uterus on one or the other side, and does not displace the organ in a marked degree. Finally, hæmatocele is ushered in by symptoms of nervous prostration and shock, and followed by those which attend pelvic and general peritonitis. Cellulitis begins with the general and local symptoms of inflammation.

RICHARDSON ON SUBACUTE CYSTITIS FOLLOWING PARTURITION.—In the *Boston Medical and Surgical Journal* for February 3, Dr. W. L. Richardson, of the Boston Lying-in Hospital states that during the past three years he has met with four instances of a marked inflammatory condition of the bladder following delivery. He believes it possible that many of the cases of metritis or circumscribed peritonitis which have been reported by physicians may have been a similar temporary affection of the bladder; and with the view of calling the attention of the profession to this variety of cystitis, he reports cases. He sums up with the following remarks. All these cases presented certain points in common. In all, more or less protracted pressure was exerted, during the progress of the labour, by the child's head upon the bladder. In two of the cases, the forceps was used to hasten the delivery. In two cases in which the cystitis was best marked from the outset, the invasion

of the disease was announced by a chill. In the first case, where there was a relapse of the disease, a second chill preceded the rise in the temperature and pulse. In all the cases there was great dysuria, which in most of them was the chief symptom complained of by the patient, apart from the general constitutional disturbance. In three of the cases there was marked tenderness over the region of the bladder, and the patients complained of more or less pain referred to the same spot. In one case the pain was so great as to render the use of morphia necessary. In the severer cases, more or less nausea and vomiting were noticed during the progress of the disease. The clinical history of the lochia and milk was normal from first to last. In all the cases, the urine contained a large amount of mucus and more or less pus. In only one case was blood found in the urine on a microscopical examination. In none of the cases was the constitutional disturbance as great as would naturally have been expected from the daily variation in the record of the temperature, pulse, and respiration. At the evening visits the patients complained of feeling feverish and sick, but in the mornings declared themselves almost well, except for the dysuria or the local pain and tenderness on pressure over the pubic region. The record of the pulse, temperature, and respiration was, in all these cases, very peculiar, being characterised by a low morning and a high evening range, and this peculiarity was especially marked in the first two cases. In the last two the same variation was noticed, but the differences recorded were not nearly so great as in the others.

The only treatment adopted was the application of poultices over the region of the bladder, until the pain and tenderness had in a great measure subsided; the administration of morphia, either in suppositories or by the mouth, for the relief of the pain or dysuria; and finally, after the more acute symptoms had subsided, the bladder was washed out with warm water, and later with a weak solution of carbolic acid and water. In all the cases the washing out of the bladder was followed by a relief, and by a sudden disappearance of all the symptoms complained of, that was very striking.

KEITH ON A CASE OF FIBRO-CYSTIC TUMOUR OF UTERUS; REMOVAL OF UTERUS AND OVARIES.—Dr. Thomas Keith relates the following case in the *Edinburgh Medical Journal* for March. Emily C., aged forty, a nurse, came to him in February, 1875, from Dr. Millar, of Londonderry, on account of a soft cystic uterine fibroid of rapid growth. Though the patient had been aware for more than a year that there was something wrong, Dr. Millar's attention had been called to the existence of a tumour scarcely two months before. Since then it had increased much. There were profuse discharges of blood at the periods, and frequent attacks of pain. She had lost flesh, and was unable to discharge her duties.

The tumour extended three inches and a half above the umbilicus. Between it and the edges of the ribs on the left side one finger could be placed; on the right side two fingers. It was prominent, movable to some extent, one day elastic and hard, the next day soft and flaccid; so much so that when seen in its state of relaxation, it might easily have been taken for an ovarian cystic growth. There was no bruit over it anywhere. The cervix uteri was not much enlarged. It lay far back, and un-

usually low in the pelvis. Movements of the tumour in any direction at once affected it.

Till recently, Dr. Keith had looked upon the removal of fibrous tumours of the uterus by abdominal section as unjustifiable under any circumstances. But, within the last few months, he had operated in two cases of fibro-cystic disease of the uterus, in one case supposing the tumour to be ovarian (the only error in diagnosis in more than two hundred operations); in the other, almost driven into operating by the dogged determination of the patient to have her tumour taken away. Both of these were miserably constituted women, worn out and emaciated, bad subjects for the simplest operation; yet both recovered, and are now well. After anxious thought, the removal of the uterus with the ovaries was advised and agreed to.

This was done on February 15. Sulphuric ether was given. An opening ten inches in length was made, and the tumour was slowly pressed out of the abdomen. Both ovaries came with it, well up on the tumour. The broad ligaments were very large, covered with great veins, and full of cysts between the layers on each side. Each broad ligament was secured separately below the cysts; then a strong steel-wire was passed round the thick neck of the tumour, immediately above the vagina, and firmly secured by Kœberlé's instrument. The uterus, ovaries, tubes, and masses of cysts in the broad ligaments were then cut away. As, at this stage, it seemed doubtful whether the cut cervix could be secured external to the peritoneum without too much tension on the vagina, a piece of thin India-rubber cloth was wrapped round the neck, and fastened by another *serre-nœud*, embracing also the two tied ends of the broad ligaments. A sort of tube was thus formed, separating the strangulated tissues from contact with the living. The intention was to let the whole thus protected drop back into the pelvis, leaving the India-rubber funnel to give exit to any discharges. It was found, however, just possible to secure the stump in the lower angle of the wound, though with no small tension on the posterior wall of the vagina, by passing two soft needles through it, and bending them at a considerable angle. Several bleeding points were secured by Lister's ligatures, and care was taken to prevent blood from getting into the peritoneal cavity. The omentum was drawn downwards, and spread over the intestines as far as possible into the pelvis. The wound was closed by silk and horse-hair sutures. The only dressing used was some folds of antiseptic gauze, covered by cotton-wool and a bandage.

The weight of the tumour some hours after its removal was eight pounds four ounces, but a large amount of serum had already oozed from it. This did not coagulate on exposure to the air. The uterine cavity was three inches in length, in addition to about an inch and a half included in the part secured in the wound. In neither of Dr. Keith's former cases was the cavity enlarged.

The operation lasted an hour. The anaesthesia with sulphuric ether was quiet and perfect. There was no vomiting during the operation or after it. In the afternoon, two opiate enemata (twenty and fifteen minims of laudanum) were given to quiet pain. By evening, there was moderate perspiration, also some refreshing sleep. A few turns of the screw were necessary to check some oozing from the stump, the surface of which was of the size of a five-shilling piece.

On the ninth day, an hour and a half after action of the bowels, sudden hæmorrhage came on from the wound. It was detected at once. On removing the bandage, the large pad of cotton-wool was soaked in blood up to the sternum, and blood was flowing in a stream over the pubes, forming a pile of clot between the thighs. Fortunately the patient was calm, the apparent coolness of the nurse preventing her from taking fright. The blood came from below and appeared at the surface, at the upper edge of the now hardened slough. Pressure and perchloride of iron were trusted to. For half an hour the bleeding broke out again and again in a most determined way, but by stuffing all round the slough with lint soaked in perchloride of iron, and making pressure with the fingers it was at last checked, though the hand was not removed for a couple of hours, when a compress secured by plaster took the place of the fingers. The patient looked exhausted, for the pulse had become rapid and feeble. A large opiate was given, and repeated at night.

On the fifteenth day, the slough came away in a mass with the wires, needles, and India-rubber protective. A deep cavity was left, into which the finger passed three inches. Upwards of an ounce of intensely putrid pus had collected behind the slough, which was found to have extended nearly an inch beyond the ligatures.

A rapid convalescence followed, and she returned to Londonderry, quite alone, thirty-two days after operation. She at once resumed her duties as nurse, taking charge of a heavy child; and though she wrote some months afterwards that she was stronger than she had been for years, she has since had an attack of acute rheumatism, from which she was convalescent at the time when the paper was written.

RECENT PAPERS.

Extirpation of large Fibromyomata of the Uterus, by Abdominal Section, and specially through Supravaginal Amputation of the Uterus. By Dr. A. Hegar. (*Berliner Klinische Wochenschrift*, March 20 and 27, April 3.)

A Case of Ovariectomy during Pregnancy. By Dr. W. Baum. (*Berliner Klinische Wochenschrift*, March 27 and April 3.)

Complicated Vesico-Vaginal Fistula treated by Obliteration of the Vagina. By M. Richet. (*La France Médicale*, March 22.)

Cases of Deviation and Prolapse of the Uterus, treated by the Application of the Ring-pessary. By M. Dumontpallier. (*Gazette des Hôpitaux*, March 28.)

On Bozemann's Method of Operating for Vesico-Vaginal Fistula. By Dr. Ludwig Bandl of Vienna. (*Obstetrical Journal*, April, 1876.)

Puerperal Septicæmia. By Dr. Hugh Miller. (*Ibid.*)

The Genesis of Puerperal Fever. By Dr. James Clapperton. (*Ibid.*)

Subcutaneous Emphysema during Labour. By Dr. Blennerhassett Athill. (*Ibid.*)

The Hydatid Mole. By Dr. Ancelet. (*Annales de Gynécologie*, February, 1876.)

DERMATOLOGY.

RIZZOLI ON ONYCHIA ULCEROSA LURIDA.—In a communication to the Bologna Academy of Sciences (*Centralblatt für Chirurgie*, quoted in *Allgemeine Medicin. Central-Zeitung*, March 25), Dr. Rizzoli expresses the opinion that the term onychia maligna should be reserved for cancerous onychia; and that the term onychia ulcerosa lurida should be applied to the form specially described by

Vanzetti. Vanzetti alleged that the nail had nothing to do with either the origin or the continuation of the disease, and endeavoured to prove that it was sufficient to treat the ulcer by nitrate of lead to ensure recovery. Rizzoli, on the other hand, says that microscopic examination has shown him that the nail has many sharp projections on its under surface sufficient to keep up the ulcer; while nothing is found on examination of the ulcer itself capable of explaining its obstinacy.

In order to cure, therefore, it is necessary either to remove the nail or to protect the ulcer from its irritation. This protection is very well afforded by nitrate of lead, which forms a resistant crust. It is not, however, sufficient in all cases; and the removal of the nail becomes necessary.

In place of nitrate of lead, caustic potash, quicklime, acetate of lead, and especially finely powdered bromide of potassium, may be used. In many cases the onychia arises from a dyscrasia, such as scrofula; and in these internal medication is necessary.

Dr. Menzel, of Trieste, in reporting on this paper, states that he had had under treatment a case of onychia of nine months' standing in a child six years old, which resisted the repeated application of nitrate of lead and red precipitate; nor was the appearance of the ulcer improved after removal of the nail. The pain and ulcer were cured by the internal administration of iodide of potassium.

COLOMIATTI ON THE HISTOLOGY OF LUPUS.—In an article in the *Annali Universali di Medicina e Chirurgia* for November, 1875, Dr. Colomiatti arrives at the conclusion that for the present at least, lupus vulgaris may be regarded as including two species; true lupus and false lupus (pseudo-lupus). Lupus maculosus, nodosus, hypertrophicus, exfoliatus, exulcerosus, and serpiginosus, are not distinct species, but only varieties, which may be met with either in true or in false lupus, though with variations. The divisions into scrofulous lupus and syphilitic lupus are of more importance. These correspond to the pseudo-lupus of the anterior, or to cutaneous tubercle which assumes a lupous aspect on the face.

Dr. Colomiatti defines true lupus as a new formation, having a basis of connective tissue, manifesting itself in the form of large nodosities varying in size from a linseed to a pea or larger, originating in the corium and containing small nodules. These nodosities are formed of a network resembling that of the tissues of lymphatic glands, permeated by numerous blood-vessels and capillaries, and enclosing many colourless cells. In the nodosities the nodules are formed in the network already mentioned, the meshes of which are enlarged; for the most part they consist of epithelioid cells sometimes accompanied with giant-cells, neither of which, however, have any other relation to the network than that of contiguity; they represent advanced stages of the cells which, lying outside the nodules, merely line the fibres and the fibrillary fasciæ of the network.

He regards lupus as essentially distinct from tubercle; the only points of resemblance being the nodular form of tubercle, and the existence of nodules in the nodosities of true lupus. The giant-cell, found in both, he does not regard as having any specific character, inasmuch as it is met with in very various circumstances. A. HENRY, M.D.

KAPOSI ON THE ETIOLOGY OF HERPES ZOSTER.—Dr. Kaposi (*Wiener Medizin. Jahrbücher*, 1876, Heft i.) describes the case of a man, aged fifty-four,

who was brought into the Vienna Hospital on October 21, 1874, to be under Professor Dittel's care for stricture of the urethra. A false passage had been previously produced. On the 25th he was feverish, had an eruption of herpes on the under lip and chin, and at the same time became affected with herpes zoster lumbo-inguinalis of the right side. The herpetic patches extended from the spine to the symphysis pubis. He had rigors on the 27th, and died on November 1. There was erysipelas of the scrotum and right groin. The bladder had been punctured above the symphysis for retention. The spinal ganglia of the last dorsal, and fourth and fifth lumbar nerves of the right side, were slightly, and the first, second, and third lumbar ganglia much swollen, and adherent to the surrounding tissue. The microscopic appearances to be described were observable in the ganglia of all these nerves, but were most marked in those of the second and third lumbar nerves.

The blood-vessels were distended by red corpuscles, and masses of corpuscles were lying free around the vessels and between the ganglia.

In some of the ganglion-cells there was pigment, which, from its amount, and in comparison with the appearances seen in the cells of the unaffected ganglia, was considered to be pathological. In other cells the protoplasm had retracted from the capsule, leaving a free space. The space within the capsule was in several instances found full of blood-corpuscles. In some cells the protoplasm had lost its granular appearance, and had become transformed into a homogeneous colourless mass, which did not stain in carmine. In this mass a shrunken nucleus was sometimes seen.

There was nothing pathological found in the connective tissue of the ganglia.

Professor Kaposi believes these pathological changes in the ganglion-cells to have been in this case the cause of the herpes, but does not infer that in every case identical changes must exist. A complete and valuable account of all the information which has been obtained regarding the pathology of the disease is given in the paper.

LANG ON THE HISTOLOGY OF LUPUS (WILLANT).

—Dr. Edward Lang, Professor of Dermatology at Innsbruck, believes (*Wiener Medizin. Jahrbücher*, 1875) that the first stage of the morbid process in lupus is constituted by a network of cells (lupus-cell network) which grow outwards from the wall of the blood-vessels and lymphatic vessels. From the branches first formed other branches take their origin, which meet and anastomose with each other, the network becoming larger and its meshes smaller. The process occurs in two forms. In one the diseased part is not sharply bounded, the cell-growth extending into the interstices of the adjoining tissue; in the other, the affected part is limited by a boundary of normal structure, in which there are concentric layers of small spindle-cells. The first he calls the infiltrated, the second the localised form.

In the infiltrated form, the irregularly branched cells assume more and more the appearance of granulation-cells, and after a considerable time undergo a process of degeneration which frequently begins about the centre of the mass. In the localised form, the cells soon begin to degenerate. The cells in the centre alter first, both the cell and the nucleus sometimes swelling to double their original diameter.

The swollen cells resemble epithelial cells. There are also cell-masses formed, which contain a great number of nuclei. The cellular masses are in communication with the lupus-cell network. In a further stage these cells have broken up into small particles.

Groups of localised lupus-nests run together and form larger lupus-masses, some breaking down whilst new ones form. Near the border of the lupus-formation, there is a proliferation from the wall of the vessels of a system of tubular structures which contain no formed elements, although they are evidently connected with the process of circulation.

As the process advances, the vessels disappear under the compression produced by the growing cell-network, the elements of the vascular wall undergoing the same kind of degeneration as the cells of the network. At this stage there are also found structureless colloid flakes.

Similar changes are seen in the infiltrated form.

Proliferation of the sweat-glands and their ducts takes place, followed by a degeneration in the form of multinucleated masses. Precisely similar changes take place in connection with the sebaceous glands.

From the cells that are formed in the corium processes enter the rete Malpighii, separating the epithelial cells from each other. A moderate amount of this infiltration produces a succulent condition of the epidermis. When largely developed, the free cells and detritus produce crusts on the skin. In other cases, when the cells grow rapidly, the epidermis is bulged outwards, becomes thinner, and often yields. He never observed a transformation of the epithelium into lupus-tissue, nor a passage of one kind of cells into another.

Corpuscula amylacea were sometimes found in the centre of the multinucleated masses.

In skin from a cicatrising lupus, the cutis was found to be formed by closely felted connective tissue, which contained *corpuscula amylacea*, but no multinucleated masses. There were few blood-vessels, and from these there was a development of lupus-cell network.

In a second paper on the same subject (*Mediz. Jahrb.*, 1876, Heft i.), the author discusses at length the nature of the multinucleated masses which he believes to represent an intermediate stage in the process of degeneration of the tissues. In different instances he recognised them as parts of blood-vessels, sweat-glands, sebaceous glands, hair-follicles, and finally as large masses containing nuclei, arranged in planes which crossed each other.

These disintegrating masses he believes to be identical with similar structures which have been described as 'giant-cells,' and, after a critical examination of the facts and arguments which have been adduced in support of the views that have been held regarding them by different authors, contends that 'giant-cells,' wherever found, are nothing else, and have no other origin.

In a case of lupus in which a rhinoplastic operation had been successful, the skin being taken from the forehead, lupus-tubercles were two years afterwards found in the new skin.

[In regard to the nature of the lupus-cell network described as proliferating from the wall of the vessels, it is well to remark that Professor Lang does not indicate in these papers what his views are regarding the cells of the corium. It is to be inferred from his drawings and the text, that what he describes as a cell is the connective-tissue-corpuscle or plasmatic cell of Virchow, and the appearances described as

proliferation and extension of cell-processes should be interpreted accordingly.—*Rep.*] G. THIN, M.D.

RECENT PAPERS.

Treatment of Pityriasis Capitis by Chloralised Solutions. By Dr. Martineau. (*La France Médicale*, February 16.)
The Etiology of Leprosy. By Dr. Neumann. (*Allgemeine Wiener Medizinische Zeitung*, March 7.)

OPHTHALMOLOGY AND OTOLOGY.

JONES ON ENUCLEATION OF THE EYE.—In a paper in the *Dublin Journal of Medical Science*, for February, Dr. Macnaughten Jones states that he has arrived at the following conclusions in reference to enucleation of the eye after injury. If a globe be disorganised by an injury, shrunken, chronically congested, staphylomatous, in whole or part, or be subject to recurrent attacks of choroid-iritis; if it have any pus contained in it or be threatened with ophthalmitis; if any of these states have been complicated with hæmorrhage into the vitreous humour; and, above all, if the eye be painful, it is, he believes, safer to remove it, and not to wait for signs of sympathetic irritation in the fellow eye. This is the more to be insisted on in the uneducated and stupid patient, who may live a long distance from skilled advice. If a globe be penetrated by a foreign substance and contain it, enucleation is immediately indicated. If a globe have been injured, and we be uncertain of the presence of the foreign body, but that it is of such a nature as that it might enter and leave but a small external wound—as a piece of glass, a grain of shot, a portion of cap, a fragment of steel—we must be guided by the presence or absence of such symptoms as may follow a severe injury when no foreign body can have entered, and as, in the first case, enucleate on their appearance or persistence. While pursuing an expectant plan, we may, in great part, be helped to the conclusion as to the presence of a foreign body: 1. The nature of the accident and the character of the substance; 2. Clouding of the media, hæmorrhage into the vitreous body, prolapse of the iris, injury to the lens; 3. Formation of pus in the globe; 4. Considerable increase or diminution of tension; 5. Complete loss of vision; 6. Sympathetic symptoms in the other eye.

LORING ON DETERMINATION OF THE REFRACTION OF THE EYE BY MEANS OF THE OPHTHALMOSCOPE.—Dr. Loring publishes this year a monograph of sixty pages on the above subject. His name has been so closely connected with this subject for some time past, that one turns each page with the hope that something new will be found. But it is not so. He describes several ophthalmoscopes, giving the preference to his own, Knapp's, and Wecker's, and describes modifications which he seems not to know were proposed in England as far back as the beginning of 1873. After describing his last modification, consisting of a disc containing twenty-five correcting lenses, it is strange to find the following sentences: 'The disk can be rotated either with or against the sun, and can, if occasion require, be turned by means of the forefinger without removing the instrument from the eye. This is, however, of

little or no practical importance, as the observer is apt to become confused, and the patient unduly fatigued from the continuous glare.' Surely in a large clinic the ability to examine an eye 'without removing the instrument from the eye' is of importance. He does not agree with those who have objected to the use of two correcting lenses behind the mirror, and says 'the lessening in illumination is so small as to be of no consequence at all.'

Perhaps the most interesting question on which he speaks is that of our ability to test by the ophthalmoscope the total amount of hypermetropia present without using atropine. Mauthner says the total amount is revealed; and Loring, without accepting Mauthner's statement unreservedly, nevertheless believes 'that a very close approximation to it can almost invariably be obtained.' One of Mauthner's cases was the following. 'A boy of twelve years presented the usual symptoms of asthenopia. Both concave and convex glasses were declined for distant vision. Even convex one-sixtieth was obstinately rejected. The ophthalmoscopic examination brought to light a hypermetropia of one-fifth. The eye was then paralysed with atropia, and the total was found to be by glasses one-fifth.' Dr. Loring goes on to say: 'Inasmuch as I have never seen a case of total hypermetropia of so high a grade as one-fifth where there was no manifest at all, I am unable to corroborate the above case with a precisely similar one from my own practice. I could, however, cite many where the degree of the manifest was very trifling in proportion to the total revealed by the ophthalmoscope, and where the latter obtained by this means differed but slightly from what was subsequently obtained by the use of atropia and glasses. For example, one-thirty-sixth with glasses, one-twelfth with the ophthalmoscope; one-twenty-fourth with glasses, one-sixth with the ophthalmoscope, one-sixth with atropia, one-eighteenth with glasses, one-sixth with the ophthalmoscope, one-fifth and a-half with atropia; one-eleventh with glasses, one-fourth and a-half with the ophthalmoscope; one-twelfth with glasses, one-fifth with the ophthalmoscope, one-fifth with atropia, etc. Such glittering results as these certainly need but little comment, and their practical application but little explanation, the only wonder being that examinations of this kind are not as universal as the use of the ophthalmoscope itself.

'There is one point which at first appears curious, and that is, that we get the most exact, and certainly by far the most brilliant results, just where we should expect them least; that is, with the highest grades of hypermetropia, at least such has been the writer's experience; so much so that he feels convinced that it is very difficult, sometimes impossible, with young people to tell the lighter degrees of hypermetropia (less than one-fortieth) with the ophthalmoscope, unless, indeed, atropia has been used. This he believes to be owing to the fact that hypermetropes of a high degree often relax their accommodation entirely while looking inattentively into the distance, and make no effort to call forth their accommodation till their attention is aroused; when, however, their attention is called to some particular object, they instinctively call forth that amount, or very near it, which is demanded for parallel rays. Consequently, under glasses where particular attention is required of them in deciphering the smaller letters of the test card, they refuse to relax their accommodation except to a trifling degree. But when placed in a dimly lighted room, and told to look at a wall which offers

a black and diffused surface, and which will appear to them but a little less distinct even when seen in circles of dispersion, they have no difficulty in relaxing their accommodation. But young persons who have say hypermetropia one-fortieth, or less, see clearly in the distance with so little effort, that they probably never relax their accommodation, preferring to make slight demands on their ciliary muscle, than to see in circles of dispersion. Their condition is practically emmetropic, and in the ophthalmoscopic room they relax their accommodation no more than they are accustomed to, accommodating for the plane of the wall which they see distinctly, or at most for parallel rays. We may, however, lay it down as a rule even in these cases, that where little or no hypermetropia can be detected either by glasses or the ophthalmoscope little or none exists. . . .

'So much for the ophthalmoscope where atropia has not been used, but there are cases in which it is even superior to the test by atropia and glasses, where the latter, indeed, utterly fail in giving an idea of the amount of hypermetropia, as the following case will show.

'A bright little girl was brought to me for the purpose of having the exact optical condition of the eyes determined. With a convex one-twenty-fourth vision was decidedly improved; amounting, however, even with the glass, only to one-fifth of the right eye, one-tenth in the left. The same result was obtained under atropia. Glasses of various strengths from one-twenty-fourth to one-twelfth were tried, and still the vision remained about the same. Recourse was now had to the ophthalmoscope, when a total hypermetropia of one-seventh was found in the right, one-sixth in the left eye. The discrepancy between the glass selected by the child, and the amount of hypermetropia as given by the ophthalmoscope, was so great that an independent examination was made by another oculist with precisely the same result in each eye.'

W. LAIDLAW PURVES.

CRITCHETT ON CONGENITAL CATARACT AND ITS TREATMENT.—In an elaborate paper read before the ophthalmological section of the Brussels Congress in 1875 (*Annales d'Oculistique*, November, December, 1875, and *British Medical Journal*, March 4 and 11, 1876), Mr. Critchett discusses at some length the various methods of dealing with that form of cataract known as 'laminar' or 'zonular,' at present in vogue. At the outset he warned his hearers that surgical interference with cataracts which are complete, and which are met with in very early infancy, is not always safe or attended with good result, inasmuch as the opacity of the lens is in some instances indicative of an unhealthy fundus, a condition of things which cannot be predicted. In these cases, however, sight, or at least useful sight, has never been known by the patient, so that, however disappointing the result of an operation may be, the patient's actual condition is in no way worse thereby.

In cases of laminar cataract, on the other hand, the conditions are far otherwise, for experience has abundantly shown that a transparent margin of the lens may exist sufficiently wide to admit of very useful sight, so that individuals with this form of cataract have been known to complete their education and to have earned their living in spite of their defective vision. The question here arises, and was, in fact, addressed to the Congress, how far has this kind of laminar opacity a tendency to remain

stationary or to involve the entire lens. In Mr. Critchett's experience, cases in which there has been no irregular opacity of the capsule, as well as the opaque zones, have appeared to remain stationary; and a great improvement of vision has been obtained by the performance of an exceedingly small iridectomy, by which a portion of the pupillary margin only of the iris has been removed. This proceeding would, however, be applicable to such cases only as those which presented a considerable margin of transparent lens. The propriety of performing it instead of removing the entire lens would be, in a great measure, determined by the amount of improvement in vision which was obtained by the use of atropine. Assuming, after this had been tried, that it was deemed advisable to remove the cataractous lens, Mr. Critchett raised the further question as to whether it is safer to trust to the process of absorption alone, or to combine it with 'linear extraction,' with or without suction. His own experience had taught him that it was safer to trust to the removal of the lens by absorption only, for, although the proceeding involves loss of time, yet it is usually followed by the formation of a round and mobile pupil, whereas linear extraction will very often fail to procure this, and it is besides not unfrequently attended with considerable risk in its performance. Of course cases frequently occur to everybody in which linear extraction is imperatively called for. Under no circumstances, however, would Mr. Critchett operate upon both eyes at once, inasmuch as in the case of adults some useful amount of vision very often remains in the untouched eye.

BOWATER J. VERNON.

BEZOLD ON SALICYLIC ACID IN AURAL DISEASES.—The *Gazette Hebdomadaire de Médecine et de Chirurgie* for February 25, 1876, gives an abstract of some observations by Dr. Bezold in the *Monatsschrift für Ohrenheilkunde*, nos. 3, 8, 9, 1875, from which it appears that that gentleman has used salicylic acid in many diseases of the ear. He finds that the substance succeeds very well as a parasiticide and rapidly destroys oto-mycosis. Perforations of the membrana tympani cicatrise very rapidly when treated with salicylic acid injections. The acid also arrests the development of the germs of gonidia, but it is important to continue its use until all germs of the parasite have been extracted from the ear by injections. In suppurative inflammations, whether acute or chronic, good results have been obtained by the employment of an alcoholic solution of salicylic acid injected into the ear, the purulent secretion markedly diminishing and cicatrization advancing rapidly.

CHISHOLM ON SALICYLIC ACID IN AURAL DISCHARGES.—In the *Western Lancet*, no. 10, 1875, is an account of Dr. Chisholm's experience of salicylic acid in aural discharges. The form in which he used the acid was chiefly in powder diluted with calcined magnesia or oxide of zinc; the pure acid might, however, be applied quite safely to a discharging tympanic membrane. The powder, in the proportion of one part of salicylic acid to two parts of magnesia, is blown into the ear through a quill or a laryngeal powder-blower, the organ having of course been first thoroughly cleansed. Dr. Chisholm has found the effect good in all cases; its effect being, however, more marked in some persons than others.

W. DOUGLAS HEMMING.

RECENT PAPERS.

- On some Points of Practice relating to the Operation for Cataract by Linear Extraction. (*Le Mouvement Médical*, February 5, 1876.)
 A new Optometer. By Dr. Badal. (*Annales d'Oculistique*, January and February, 1876.)
 Sympathetic Cyclitis and Ophthalmia. By M. Reich and M. Savary. (*Ibid.*)
 Ophthalmic Zona. By Dr. J. Coppez. (*Ibid.*)
 On Serous and Parenchymatous Retinitis. By Dr. Droguat Landré. (*Ibid.*)
 On Atrophy of the Papilla in Gastric Affections. By Dr. X. Galezowski. (*L'Union Médicale*, March 7.)
 Tattooing of the Cornea. By M. Poncet. (*Le Progrès Médical*, March 18.)
 On Myringotomy. By Dr. Miot. (*Ibid.* March 25.)

REPORTS OF FOREIGN SOCIETIES.

IMPERIAL ROYAL SOCIETY OF PHYSICIANS IN VIENNA.

January 7.—*Double Paralysis of the Upper Limbs.* In a communication on this subject Dr. Rosenthal said that, in clinical experience, myelitic foci in the cervical portion of the cord are found to produce paralysis, first of the upper, and then of the lower, limbs. The same thing occurs in acute injury of this part, also when tubercle is present, and when the cervical spinal cord is compressed by extravasation. To the paralysis, contraction of the muscles is subsequently added. Isolated paralysis of the upper limbs occurs also when there is merely disease of the cells of the grey substance of the cord; and, according to almost all observers, the essential paralysis of children is due to acute disease of the anterior cell-groups of this part. This affection may also occur in adults. A third kind of isolated paralysis of the upper limbs, also produced by disease and subsequent degeneration of the anterior cell-groups of the cervical spinal cord, occurs in progressive muscular atrophy. Here also the paralysis is for some time confined to the upper limbs. Along with these central diseases there are also paralysis of the upper limbs arising from peripheral causes, such as effusion of blood between the roots of the nerves, pachymeningitis in the cervical portion of the cord, and pressure on the roots of the nerves in the affection described by Charcot as hypertrophic cervical meningitis. The author related two cases showing the importance of diagnosis, inasmuch as recovery occurred in them, which is not the case in myelitic disease of the cervical part of the cord.

January 14.—*Internal Strangulation.*—Dr. Klob made a communication on this subject. He could not well see why surgeons abstained from opening the abdomen in cases of internal strangulation. Ovariectomy was a dangerous operation, and yet had been successful in a large number of cases. To find the seat of incarceration is often very difficult, even in the dead body; and hence it is necessary to learn a methodical proceeding which may facilitate the discovery of the lesion. Such a proceeding is demanded by what is known of numerous cases, and surgeons will be able to perform the operation if only sufficient clinical and pathological material be afforded. The author was so convinced of this, that he would have abdominal section performed on himself if he suffered from internal strangulation. Ac-

cording to Rokitsansky, internal incarceration is produced by numerous but not always present peritoneal folds, by contracting false membranes, which form sacs, into which an empty portion of intestine passes, and cannot escape from the narrow opening when it has become filled. If the edge of the sac be rigid, we have transition from internal incarceration to internal (strangulated) hernia. Rokitsansky distinguishes three kinds of strangulation in internal incarceration. In the first kind, the pressure on the intestine is produced by another portion of intestine or of the mesentery. Generally it is the very movable small intestine that presses on the descending colon, or on the sigmoid flexure, especially when the former is over-distended and its innervation impaired, and the latter are empty and lie along the sacrum and pelvic wall. Most of the cases of internal incarceration of this kind occur in aged persons, who have a long mesentery, and suffer from habitual constipation through defective innervation. In them the incarceration takes place slowly and gradually. Rokitsansky relates in his work four cases of this kind in which the sigmoid flexure, the cæcum, and the ascending colon were compressed and rendered quite impervious by convolutions of the ileum. Dr. Klob had also had two cases. In one, a man aged sixty, the subject of habitual constipation, died with symptoms of meteorism, vomiting, ileus, etc.: the small intestine had rendered the descending colon quite impervious. In the other case, a man aged seventy-nine, also habitually constipated, died with similar symptoms, and the appearances found after death were quite analogous to those in the former case. The gall-bladder was contracted and contained a large calculus. With respect to this, it is worthy of remark that in two of Rokitsansky's four cases gall-stones were found; in the others, there is no mention of the state of the liver, though there was a want of biliary colouring in the fæces. In cases of this kind, nothing is to be expected from operation. The second kind of internal strangulation is that arising from twisting of the intestine on its axis. If a portion of intestine be so twisted, a half turn is sufficient to obstruct the large intestine. The axis on which the twist is made may also be the mesentery or another portion of intestine. The author saw two cases in which the sigmoid flexure passed over the liver, giving rise to a tympanic percussion-sound and leading to a wrong diagnosis. Internal incarceration of this kind is distinguished from the former by its rapid and sudden occurrence, and by the early appearance of peritonitis. A third kind of internal strangulation is produced, according to Rokitsansky, when bands, the results either of defects in formation or of disease, form rings or clefts. The vermiform appendix, the appendices epiploicæ, the appendages of the female genital organs, and new formations adherent to portions of the small intestine, give the opportunity for strangulation. In cases of this kind, reduction may be easily effected during life. With regard to the treatment of internal incarceration, it is worthy of remark that, in his work published forty years ago, Rokitsansky pointed out the inutility of internal remedies. Laxatives are useful at first, but do harm afterwards; the knife alone can then bring incontestable aid. Dr. Klob showed a preparation in which a band passing from an appendix epiploica of the large intestine encircled a portion of the ileum, contracting it, and leading to gangrene.—Dr. Schrötter said that four years ago he had con-

sulted Professor Rokitsansky in a case of internal incarceration in his clinic. An operation was performed. Although prepared to meet with difficulty, he was greatly astonished at the pressing forward of the intestine and the trouble of keeping it in place. He removed the obstruction, which was produced by about two inches of the sigmoid flexure being twisted on its axis and also compressed by intestinal convolutions. The result was unsuccessful, and he was blamed for performing the operation; but he held the same opinion as to its propriety as he had four years ago. In his case the operation was not decided on until the fifth day, when the intestine was gangrenous and perforation imminent.—Dr. Winternitz commented on the tendency of surgeons to delay operation until all other means had been tried. A proceeding which had produced remarkable results in many cases of internal strangulation was irrigation of the intestines. The intestine could receive large quantities of water (from one to three litres); he had seen a case in which simple injection of water succeeded after all other means had failed. In cases where the large intestine was twisted on its axis, as well as in intussusception, for the purpose of diagnosis, this treatment was to be recommended. It had been ascertained that the water passed up as far as the ileo-cæcal valve.—Dr. Klob admitted the possibility of a good result from injection of water; but he had met with two cases in which it had been used in vain, and had distressed the patients, who could scarcely bear the position on their knees and elbows. Besides, what good could injection do where, perhaps, the incarceration was produced by bands of false membrane?—Dr. Winternitz replied that injection could be performed when the patient lay on the back with the sacrum raised. It was of use also in the diagnosis of intussusception, tumours, etc.—Dr. Weinlechner related a case in which he had performed abdominal section on a child on account of intussusception in the ascending colon. The child died of peritonitis. A student also died of intussusception, on whom tobacco-clysters, injection of water, etc., had been tried without effect. He was already delirious when Dr. Weinlechner saw him, and therefore an operation was not performed. The necropsy showed that an operation might have been successful. In many other cases the symptoms passed off, and the patients recovered. His experience taught him that frequently the favourable moment for operation was lost while internal treatment was being pursued.—Dr. Eisenschitz had treated the first case mentioned by the previous speaker, and was then convinced that operation alone afforded a chance of life. The release of the intussuscepted portion of bowel was easy; adhesion did not prevent it. English surgeons had found no adhesions even after five or six days. In England, cases of recovery after operation for intussusception were not rare. Hutchinson had called attention to the danger of puncturing the bowel, and so allowing the escape of its contents into the peritoneal cavity.—In reply to a question of Dr. Teleky regarding examination by the rectum according to Simon's method, Dr. Dittel said that the proceeding was difficult to the operator and dangerous to the patient, besides being almost useless in cases of internal incarceration, as the hand could scarcely be introduced sufficiently far.

January 21. *Surgical Communications.*—Dr. Dittel showed the broken end of a meerscham cigar-

holder which he had removed from the bladder of a woman forty years old. The patient was said to have already removed a similar portion. Symptoms of cystitis set in, but soon disappeared. He also showed a pointed prickly piece of bone which, after passing through the whole intestinal canal, had become fixed in the rectum, from which it was removed; also a fibro-cartilaginous mass removed from the external ear, and a fragment of a catheter taken from the bladder.

Intra-articular Injuries of the Knee-Joint.—

Dr. Dittel had made experiments on the dead body, in order to ascertain what ligaments are stretched in normal and in powerful excessive movements, and how and where, in the latter case, intra-articular injuries are produced. The experiments had reference to flexion, extension, and rotation. *a. In flexion*, the anterior part of the joint was strongly put on the stretch, and this remained the only result when flexion was made as powerfully as possible. When the part was opened, no lesion was found. Besides the resistance of the ligaments, resistance was also afforded by the soft parts; on removing the latter, and bending the joint, it was found, on laying open the capsule, that the anterior crucial ligament was loosened, but not torn; and the loosening always occurred at the femoral insertion. If flexion were increased by insertion of a wedge the ligaments were completely torn off. The latter injury might occur in gymnastic exercises, and the intra-articular lesion might be recognised if the limb could be freely bent before inflammation set in. *b. The second series of experiments* had reference to normal and excessive *extension*. It was found that no amount of extension in a straight horizontal line produced intra-articular injury, but when the angle of extension was obtuse, the cartilages of the tibia were separated in young subjects, and the anterior crucial ligament was detached from its femoral connection. *c. Rotation* while the limb was bent, whether inwards or outwards, only stretched the ligaments. If rotation were attempted to be carried to a greater extent by inserting a piece of wood between the tibia and fibula, the latter bone was fractured or a complete breaking up of the joint was produced. A case had come under Dr. Dittel's care, of injury of the knee which had hitherto been produced only by experiment. A man, aged twenty-five, was on November 25, according to his account, turned out by a tavern-keeper, and fell to the ground. The next day the knee was swollen and somewhat warm; the skin was of usual colour, and movable. The swelling was sharply defined; fluctuation was evident; motion was difficult and painful. It was believed that there was extravasation in the joint; a puncture was therefore made, and a large quantity of dark fluid blood removed. Moderate compression was made, the limb was placed in a straight splint, and cold dressings were applied. On the 24th a second puncture was made, which gave exit to much fluid blood; and on the 29th another puncture was made. Severe inflammation of the joint with lymphangitis now set in, and the capsule was laid open and drained from both sides. Lister's dressing was used. The pus became thin and of bad odour; there were also symptoms of embolism, vomiting, great restlessness, etc., for five days. On the eleventh day there was suppuration in the thigh, which was treated by incision. On the thirteenth day, distinct crepitation was felt on rotating the joint. Amputation was performed under the carbolic spray, and Lister's

dressing was applied. The wound assumed an unhealthy aspect, the patient became greatly weakened, bed-sores appeared at several parts, and he died five days later. The necropsy showed that the anterior crucial ligament was torn away, along with the intercondylar eminence and an adjacent portion of bone. It was probable that feeble adhesion had taken place and had afterwards been broken through. As regarded the treatment of such cases, the most important part was to render the joint perfectly immovable, which was best done by a plaster of Paris bandage. Had this been done, the result of the case might have been more favourable.—Dr. Jurié had under his care a case in which he had opened the knee-joint according to Lister's method. It was doing extremely well.

January 28. *Trichiniasis*.—Dr. Heschl gave an account of three cases of trichiniasis which had occurred at Raabs, and called attention to the importation of trichinised pork into Vienna. Rats frequenting the neighbourhood of the place where trichinised pigs were kept were found to be affected with trichinæ.

Anatomical and Pathological Preparations and Casts of the Membrana Tympani.—Dr. Politzer showed a number of preparations which he had made for the exhibition in Philadelphia. His object was to show at a glance the anatomical relations of the parts, and especially the position of the membrana tympani, ossicles, and labyrinth. The normal preparations showed—1. The outer and inner surfaces of the membrana tympani with the ossicula auditus; 2. The bony meatus entirely separated from the surrounding bones, showing the oblique position of the membrana tympani; 3. Vertical and horizontal sutures of the ear, showing the Eustachian tube, cochlea, and vestibule from various aspects; 4. The relation of the semicircular canals to the tympanum; 5. The position of the cochlea with relation to the tympanum; the cochlea being in some of the preparations laid open to show the lamina spiralis; 6. Various views of the different parts of the ear in connection. The pathological preparations were: 1. Calcareous deposits in the membrana tympani; 2. Double perforation of the membrane; 3. A very large perforation, the membrane being almost entirely destroyed; 4. Funnel-shaped growth of the membrana tympani to the inner wall of the tympanum (rare); 5. Separation of the handle of the malleus from the membrana tympani (rare); 6. Extensive calcareous and cicatricial degeneration of the membrane, and growth to the inner wall of the tympanum; 7. Adhesion of the membrana tympani to the inner wall of the tympanum in such a way as to close the tympanic opening of the Eustachian tube; 8. Destruction of the membrana tympani and growth of the lower end of the handle of the malleus with the promontory. Dr. Politzer also showed casts of anomalies in the arching and of solutions of continuity of the membrana tympani. He called attention to the importance of a knowledge of the state of the membrana tympani with reference to diseases of the organ of hearing, and especially of the middle ear. Beginners met with great difficulties in discerning changes in the convexity of the membrana tympani and certain forms of solution of continuity. Great assistance was afforded by the demonstration of well-marked pathological preparations. Besides the fact that many changes in the membrana tympani observed during life nearly or totally disappeared after death,

the small size of the object rendered it difficult for the beginner to reconcile the state found after death with that observed during life. He had therefore had made a series of fifteen enlarged preparations in wax, showing perforations, calcareous deposits, cicatrices, adhesions, granular myringitis, the formation of vesicles, excessive vaulting inwards, etc.

Abnormal Membranes in the Larynx.—Dr. M. Bresgen exhibited two larynges, showing apparently congenital membranous bands running an abnormal course.

February 4. *Large Nasal Polypi*.—Dr. W. Roth showed three large polypi, which he had removed from the middle meatus of the nose of a man aged thirty-five.

Pemphigus.—Dr. J. Neumann described a case of pemphigus, with microscopical demonstrations. During the occurrence of slight symptoms of angina, a nodulated uneven excoriated spot as large as a thaler appeared in the skin of the axilla; it grew rapidly, and for some time presented the appearance of the confluent form of syphilis cutanea vagitans (*frambœsia syphilitica*). Later on, bladders varying in size from a pea to a hazel-nut appeared and burst, their bases assuming the appearance of broad condylomata. After the disease had lasted six weeks, it first assumed the form of pemphigus vulgaris. The contents of the vesicles was at first serous and gummy-looking; at a later period, the new vesicles contained a small amount of water, which quickly underwent decomposition. The patient died. A similar case, ending in recovery, had been described by Hebra, in which, after the bursting of the vesicles, whitish-yellow convex masses formed in their bases, being closely adherent to the cutis; they were recognised as 'croupous' exudation. In the author's case similar protuberances were present, but they did not appear until the contents of the vesicles had been some time discharged. They did not consist of croupous exudation, but of newly formed tissue, containing new papillæ and large vascular loops, with exudation-cells and pigment. These new growths were formed within a short time in parts, such as the axilla and abdominal wall, where no papillæ existed in the normal state. The sweat-glands were distended, partly by dead cells, partly by a homogeneous membraniform exudation.

Hegar's Injection Apparatus.—Dr. Mader described Hegar's apparatus, and spoke of its utility. It consisted merely of a terminal piece and a glass funnel, connected by an India-rubber tube. The resistance to the introduction of water into the rectum was very small; a column of fourteen centimètres (five and a-half inches) in the tube was sufficient to keep up a constant stream. If the patient were placed on the knees and elbows, the resistance became *nil*. Mosler had found that fluid passed ten feet beyond the ileo-cæcal valve in a girl, aged fourteen, without producing the least distension. This was of importance in regard to internal incarceration, inasmuch as success might be expected even when the obstruction was high up. As regarded quantity, Mosler had injected five litres of fluid, but Dr. Mader used only three. When this quantity was reached, two patients experienced fulness and distension. The indications for the use of the apparatus were described as being the following. 1. The administration of enemata. The apparatus does not produce pain or danger, and is suited for children as well as for personal use. 2. The treatment of diseases of the rectum by the injection of

medicines in solution, such as injection of a one per cent. solution of tannin in chronic dysentery. 3. The completion of the treatment of tænia by the removal of the head. 4. In internal incarceration; even though the only result be to determine more accurately the seat of obstruction. 5. In the diagnosis of abdominal tumours. 6. In affections of the urinary bladder (in which a double-current catheter is also useful), and in pyo-pneumothorax. 8. As a substitute for the stomach-pump in the mechanical treatment of affections of the stomach.

MEDICAL SOCIETY OF BERLIN.

January 5, 1876. *Transposition of the Viscera.*—Dr. Guttman demonstrated a case of transposition of the viscera. He said that more than one hundred cases of this anomaly had been recorded. Transposition was more frequent in males than in females, in the proportion of about two and a-half to fifteen. In 90 per cent. of the cases it affected both thoracic and abdominal viscera; in 10 per cent. the abdominal viscera alone. In about 75 per cent. of the cases of thoracic and abdominal transposition, it was complete; in 25 per cent. it was more or less incomplete. Transposition of the abdominal viscera alone was more frequently incomplete than complete. In complete transposition, not only was there inversion of all the asymmetrical organs and their appendages (the uterus and bladder preserved their position in the middle line), but also of the symmetrical organs, vessels, nerves, etc.; for instance, the right lung had two lobes, the left three; the left kidney lay lower than the right, the right testis lower than the left, etc. The transposition of the thoracic and abdominal organs was not always regular; anomalies of formation, defective development, etc., occurred in various organs, especially in the heart (in 10 per cent.); in some cases there were malformations which could be recognised by external examination. Life was not shortened by transposition of the viscera; in more than half of the cases, the ages of the individuals varied between twenty and eighty-four years.

As regarded diagnosis, the position of the heart, liver, spleen, and stomach could be recognised by percussion; also, with some probability, that of the rectum and colon, especially when the resonance in the left iliac region was constantly louder and more tympanic than in the right. Further, the position of the stomach in the right hypochondrium, and of the œsophagus to the right of the trachea, could be recognised by auscultation better than by percussion; in swallowing fluids, the splashing sounds in the stomach and trachea could be heard in these situations. Transposition of the lungs might be recognised if the pectoral fremitus and the bronchial expiratory murmur, audible over the bifurcation of the trachea, were heard more loudly on the left side than on the right. As regarded the question whether the slight convexity of the spine towards the right depended on right-handedness or on the course of the aorta on the left of the vertical column, the latter supposition appeared the more probable. Notwithstanding that right-handedness was met with in eleven cases out of thirteen, in ten out of fifteen the convexity was to the left, the aorta lying along the right of the spine.

Dr. Guttman showed a man, aged forty-four, the subject of complete transposition. There was no family history of malformation; all his children were

normally formed. He was moderately strong, and had been in good health up to three years previously, since which time he had complained of cough and occasional shortness of breath. The heart's impulse, feeble and diffused, was felt in the fifth and sixth right intercostal space, two centimetres to the inner side of the nipple. The cardiac dulness began at the fourth right rib, reached downwards to the sixth, and as far as the right edge of the sternum. The sounds of the heart were perfectly clear; the cardiac pulsations were eighty in the minute. From the sixth right rib downwards a rather high tympanic resonance was heard, corresponding to the stomach; when water was swallowed, a splashing sound was heard in this situation. On the right side, splenic dulness commenced at the ninth rib and extended downwards to the eleventh. On the left side, pulmonary resonance was found as far as the seventh rib; liver-dulness began at the seventh rib in the nipple line, at the sixth intercostal space in the parasternal line, and at the eighth in the axillary line. The liver could be felt on deep inspiration in the left hypochondrium. The differences of resonance in the iliac regions were too inconstant to allow the position of the colon and rectum to be determined.

There were slight pulmonary emphysema and catarrh; hence, the heart being more covered, the cardiac dulness was somewhat reduced; the upper limit of the liver-dulness also lay more deep, and the area of splenic dulness was reduced. The pectoral fremitus was stronger on the left side than on the right; and in the left supraspinous region, close to the spine, the bronchial breathing was audible during expiration, but not in the right; this indicated transposition of the lungs. The dorsal spine was nearly straight as far as the seventh dorsal vertebra, and was then convex to the left. The right testis was lower than the left; the man had varicocele on the right and inguinal hernia on the left. He was right-handed; the two halves of the body were equally developed; no difference between the arms or between the thighs could be found by measurement.

January 12. In commenting on Dr. Guttman's case, Dr. Lewin called attention to a fact not hitherto observed in cases of transposition; namely, the ending of the right internal spermatic vein in the right venal vein. In the normal state, the right internal spermatic vein opens directly into the inferior vena cava; the left into the renal vein of that side, at a right angle. The abnormal disposition to which he referred probably existed in the present case, there being varicocele on the right side.—Dr. Henoch believed that cases of transposition of the viscera were much more frequent than was generally supposed, but that they were not recognised during life. He had found it, in a complete form, in a child a year and a-half old, who was brought into the Charité Hospital in a state of collapse and died.—Dr. Tiburtius had found transposition in a complete form twice in 20,000 soldiers.

The Inorganic Constituents of the Urine.—Dr. Zuelzer said that, though the mineral constituents of the urine had not yet received sufficient attention, there was no doubt that they played an important part in the system. Liebig had shown that the inorganic matters remaining after incineration of the same organs of different animals showed a constant relation to one another. Further, it had been shown that there was a relation between both the combustible and incombustible parts of individual organs. It had been proved by the analyses of

Forster and others, that the relations between the nitrogen and phosphoric acid remained alike. As the change of substance proceeded equally in all constituents of the body, the existence of great regularity in the composition of organs (and of food) would lead one to expect a constant relation in the elementary products. A disturbance in this respect indicated some alteration in the tissue-change; and a knowledge of the mineral constituents of the urine afforded a view of the process of tissue-change more complete than that derived from examination of the nitrogenous substances alone. As an example, Dr. Zuelzer described the results of a long series of researches on phosphoric acid. If phosphoric acid were exclusively derived from the albuminates, the relation between the phosphates and the nitrogenised bodies in the urine must be constant. Indeed, Pettenkofer and Voit, with others, alleged that the excretion of phosphoric acid ran parallel with that of nitrogen. This, however, was contested, and the question was not yet settled. A stable relation between the phosphoric acid and nitrogen in the urine would eventually show that, *cæteris paribus*, both these substances were derived from combinations which always had similar percentages of them. In the contrary case, it would have to be assumed that substances were decomposed within the organism, so that the relation of phosphoric acid and nitrogen to each other varied. On feeding dogs with meat, Dr. Zuelzer found that, in twenty-four hours, with 100 parts of nitrogen, twelve or fourteen parts of phosphoric acid were eliminated. When the animals were fed with potatoes, bread, etc., or with brain-substance, the relative amount of the phosphates was increased. During fasting, also, there was an increase in the amount of phosphoric acid relatively to the nitrogen. In healthy men, the relative quantity of phosphoric acid varied only slightly. It generally oscillated immediately after meals; but at other times of the day was constant, though dissimilar. There was a relatively smaller excretion of phosphoric acid in the forenoon than at night. The excretion was relatively greatest in earliest childhood, relatively least in powerful middle age. In febrile processes, these relations underwent a characteristic change. During the stage of high pyrexia, there was a remarkable increased elimination of nitrogen, with a relatively decreased elimination of phosphoric acid. In deferrescence large quantities of both were discharged, and in convalescence, especially at the beginning, the quantity of phosphoric acid predominated. In cholera, the urine first passed after an attack was rich in phosphates, the quantity of which was constantly diminished as convalescence advanced. In acute atrophy of the liver, and in Addison's disease, the amount of phosphoric acid was reduced throughout the whole course of the disease; in the former, according to Frerichs, it entirely disappeared. The relative quantity of phosphoric acid appeared to be increased after the use of narcotic doses of morphia, chloral, chloroform, etc., and to be diminished after the use of alcohol, strychnia, etc.; it was also increased (relatively) by warm baths, bodily exercise, and deficient supply of oxygen, and was reduced by cold baths, etc. Dr. Zuelzer arrived at the following conclusions. 1. In similar external conditions, the relation of phosphoric acid remains constant. 2. It varies when different influences act on the body; during excitement the excretion of phosphoric acid is relatively diminished, while in states of depression it is increased. As it was principally nervous influences

which brought about the most essential changes in the relative value of the phosphoric acid, it might be inferred that these were to be preferably regarded as the expression of the tissue-change in the nerve-substance. This view was supported by the evidence afforded in Weiske's experiments, that, even when the food was deficient in phosphoric acid and lime, the formation of the bones was not impeded; while in analogous circumstances, according to Forster, the nutrition of the brain was almost the only change produced. On the other hand, Dr. Zuelzer remarked, the relative amount of phosphoric acid in the urine was greatly increased after injuries of the brain.

ACADEMY OF MEDICINE IN PARIS.

February 29. *Ocular Myotomy*.—M. J. Guérin read a memoir on ocular myotomy by the subconjunctival method, of which the conclusions were as follows. The principles of the operation are, 1. To destroy all the elements and to destroy only the material etiological elements of the deformity; 2. To try to obtain the end-to-end junction of the divided muscles, without adhesion with the globe of the eye; 3. To maintain the divided extremities at such a degree of separation that the intermediate distance shall neither be too short nor too long; 4. To be as careful as possible with the anterior insertion of the fascia into the sclerotic; 5. To avoid firm and extensive adhesions of the fascia with the sclerotic, so that its layers may continue to glide more or less freely over the eyeball. The means of fulfilling these principles are the following.—*a*. The subconjunctival-method, just as well as the other methods of ocular myotomy, affords all the other means of attacking and destroying the etiological elements of the deformity; the dissection-method always in this respect fulfilling the most extended indications, to which the puncture-method would not respond. But the subconjunctival method alone allows of reaching these elements only, the puncture-method having the capability of limiting at will or even entirely avoiding the division of the membranes surrounding the muscles. *b*. It obtains the union of the two ends of the muscle, without adhesion with the sclerotic, preserving as intact as possible the membranous sheath, which acts as a conducting tube for the plastic matter. This condition is perfectly fulfilled by the puncture-method, in which the sheath is only divided diagonally, and may even be left completely intact. It is just the same with the dissection-method, in which the superficial layer only is raised to trace the muscle to its origin. *c*. By allowing the division of everything necessary, and nothing but what is necessary, the two stages of the method allow better than any other the proportioning of the separation of the muscular extremities to the degree of retraction measured by the degree of deviation, and also by the other characteristics of the deformity. Thus it assures a proper length to the newly formed intermediate matter, and this result is obtained by the use of mechanical movements of the eye by means of orthopædic spectacles. *d*. The anterior insertion of the fascia to the sclerotic remains nearly intact in the puncture process, which only inflicts a simple puncture, and in the dissection-method which only raises the superficial layer while preserving the attachments of the deep layer, and when, exceptionally, the retraction of the fascia necessitates to a certain extent the detachment of the anterior insertion of the two layers as the

extent of the dissection is always made in proportion to that of the retraction, so far from destroying, we only bring back the methods of union belonging to the globe to their normal condition. *e.* Finally, the puncture-method, by leaving the cell and the muscular sheath almost completely intact, allows of the play of the fascia over the globe of the eye after cicatrisation. The results were described as being as follows. Out of 192 operations, after one operation only, complete rectification occurred in 156, or 5 out of 6; deviation in the direction of the strabismus operated on in 30, or 1 in $3\frac{1}{2}$; deviation in the opposite direction in 6, or 1 in 32; re-establishment of movement as far as the contact of the cornea and the palpebral angle, in 176, or 11 out of 12; reduction of motion in the direction of strabismus operated upon in 10, or 1 out of 19; reduction in the opposite direction in 27, or 1 out of 7; reduction in both directions in 6, or one out of 32. After a second operation, complete rectification was produced in 175, or 11 out of 12; re-establishment of motion as far as the contact of the cornea and the palpebral angle in 153, or in 10 out of 12.

But beyond the anatomical restoration there is physiological restoration. And the material result of the operation on the regularity of the form of the eye and its movements, as every separate fact has borne testimony, exercises the greatest influence on the re-establishment of the visual functions. The changes of these functions, which are the necessary and direct effect of the changes of relation between the humours of the eye, whether permanent, in consequence of permanent deformities of the eye-ball, or temporary in consequence of the want of harmony of these movements and of the abnormal pressures thence resulting, these changes, according to M. Guérin, have diminished, and even, in some cases, have disappeared entirely with the disappearance of the causes which have produced and kept them up. The evil done by function has been corrected by normal function; in both these cases, function has destroyed and restored the organ. It is by this claim that the perfection of the operative system has become the key and the condition of the functional restoration consecutive on organic restoration, both of them in direct correlation with the operative method used.

March 14. *Lymphorrhagia*.—M. A. Desprès read a memoir on lymphorrhagia, consecutive on suppurative adenitis, and suppurative lymphangitis. The conclusions of this paper were as follows. 1. Suppurative adenitis and suppurative lymphangitis are generally followed, during the twenty days which follow the opening of the abscess, by a flow of lymph which delays the cicatrisation of the incision. 2. The escape of the lymph may acquire abnormal proportions, and constitute a lymphorrhagia. 3. Lymphorrhagia consecutive on suppurative adenitis is more considerable than lymphorrhagia consecutive on suppurative lymphangitis. 4. A more or less copious lymphorrhagia is the real cause of fistulæ consecutive on suppurative adenitis in healthy or scrofulous subjects. 5. Compression, whenever applicable, stops lymphorrhagia in a few days; cauterisations finally stop lymphorrhagia when it has not been found practicable to employ compression. 6. Lymphorrhagia and the flow of lymph, after angioleucitis and suppurating adenitis, are the rigorous demonstration of the primitive lesion of the lymphatic glands and vessels in suppurative adenitis and angioleucitis. 7. Finally, it results from the preceding conclusions,

that compression made during several days on suppurative adenitis and angioleucitis is the best means of preventing the formation of lymphatic fistulæ.

March 22. *The Ophthalmoscope in Injuries of the Brain*.—M. Giraud-Teulon read a report on the memoir read to the Academy by M. Panas, on the circulatory disturbances visible by the ophthalmoscope in injuries of the brain. He summed up in the following terms the discussion originated by him on this subject. In one of M. Panas's cases, notwithstanding the presence of an extensive fracture of the base of the skull, and of compression of the brain which rapidly became mortal, the phenomena of the papillary stasis were wanting at the death of the patient, which took place on the third day. The only fact recorded was the turgescence of the retinal veins, which is apt to be produced by a simple effusion confined to the interior of the orbit. The differential diagnosis between contusion and cerebral commotion cannot therefore in this case be derived from ophthalmoscopic observation only. It is likewise seen, in this case, that the papillary stasis is quite distinct from the cerebral lesion itself; it is a phenomenon of an exclusively physical order; a fact which may be termed manometric. We are therefore able, adds M. Giraud-Teulon, to commend M. Panas and to agree with him when he says, 'Papillary stasis cannot be considered as being connected with one variety of lesion rather than with another, and it is not allowable to judge the gravity of the lesion by it. All that can be affirmed in the present state of our knowledge is, that papillary stasis indicates the presence of a liquid effused into the meninges.' This conclusion from surgical observations is the same that is furnished by medical researches and already stated in the following terms. 'Swelling of the optic nerve by the venous stasis may accompany all the cerebral diseases which increase intracranial pressure, dropsy, tumours, etc.'

Localisation of the cerebral disease by the simple ophthalmoscopic image (without other symptoms) is therefore almost always impossible. According to what has already been said, we may sometimes draw from it conclusions as to the nature of the disease; but not always. The only case in which we may be certain as to the nature of the cerebral disease, is when we find tubercles in the choroid. Then we are right in diagnosing, from the ophthalmoscopic examination only, a tuberculous meningitis. By adding the observations of M. Panas to the acquisitions already made by the comparative medical anatomo-pathology of the brain and eye, the possession of a positive law of pathology is assured, and the first which may be henceforth founded in this matter. Thus we see acquired to science the existence and the function of lymphatic canalisation, which connect together, in pathology as in anatomy, the cranial and ocular cavities, the mechanism which originates false neuritis or papillary stasis, and defines the differences which separate it from true or inflammatory stasis.

ACADEMY OF SCIENCES IN PARIS.

January 31. *Ferment of Urea*.—A note was read by M. Musculus on the ferment of urea. In a former communication the author had described a reacting paper by which urea might be recognised, even in a very diluted solution. He obtained it by filtering urine which had become ammoniacal and

colouring the filter with turmeric, after having washed it. This filter contains a ferment and becomes brown on exposure to the air, after having been steeped in a solution of urea, by the decomposition of this body into carbonate of ammonia. This ferment is only found in ammoniacal urines, and resembles in its characteristics diastase and pancreatic ferment; it is not modified by alcohol, ether, creasote, nor even by carbolic acid. On the contrary, its action is impeded by acids and alkalis.

February 14. *The Movements of the Heart.*—M. Marey sent a note on the movements produced by the heart when it is submitted to artificial excitation. These movements vary according to the phase in which the cardiac revolution is at the moment of the excitation. The systole induced is the stronger, according as it comes on longer after the preceding spontaneous systole. Likewise after each induced systole a compensating rest is observed, re-establishing the rhythm of the heart, changed for an instant. This rest confirms the law which M. Marey believes he has established; that is to say, that the action of the heart has a tendency to remain constant.

Coagulation of the Blood.—MM. Mathieu and Urbain forwarded a paper in reply to M. Armand Gautier on the subject of the function of carbonic acid in the coagulation of blood. They declared that the desiccation of plasma *in vacuo* does not suffice to deprive it of its carbonic acid; in the same way as bicarbonates resist a temperature of 212° Fahr. M. Gauthier, also, in order to demonstrate that a current of carbonic acid does not coagulate the blood, made his experiments at 46.4° Fahr., which is too low to allow the coagulation of the blood.

Bite of the Rattlesnake.—M. Sacc transmitted to the Academy some documents collected by him in Texas, on the treatment employed against the bite of the rattlesnake, and on the retention of muscular irritability in the turtle after death. The treatment of rattlesnake-bite consists in applying over the wound an ointment, consisting of pounded onions and salt. With regard to the muscular irritability of turtles, the contact of a plate of copper brings on contractions, and an hour afterwards the contact of powdered acetate of soda still produces jerks.

REVIEWS.

The Natural History and Relations of Pneumonia.
A Clinical Study. By OCTAVIUS STURGES, M.D.,
F.R.C.P., Physician to the Westminster Hospital.
pp. 330. Smith, Elder, and Co. 1876.

We can cordially recommend this book to our readers, as carefully and well written by an author who has devoted much time and thought to his subject. The work is well arranged. The natural history of the disease, its morbid anatomy and admissible varieties, its etiology and distinction from other lung-consolidations, are first treated of. A chapter is next devoted to a consideration of its pathology, associations, and likeness to other diseases; and the three final chapters are concerned with its relation to phthisis and to tuberculosis, and to the treatment of the disease in past and present times. We must not omit to add that in a series of appendices will be found a very rich collection of facts, with valuable analyses and statistics, upon which are based the teachings embodied in the text.

Dr. Sturges considers that there is but one disease to which the term pneumonia is rightly applicable, the acute exudative pneumonia of other writers, a general disease, of which the lung-inflammation is but the local expression, as the intestinal ulcers are the lesion of enteric fever. He would place pneumonia amongst such diseases as quinsy, rheumatic fever, erysipelas, which are not acute specific fevers, yet in which the local phenomena are probably due to the working of some specific poison. In its being a general affection attended with an increasing hyperinosis of the blood and having a special tendency for some particular seat of inflammation, the author discerns in pneumonia a peculiar analogy with rheumatic fever; the lung and pleura being the selected points of attack in the one and the pericardium in the other disease. In endeavouring to establish this analogy he lays, we venture to think, too much emphasis upon pericarditis as being the local lesion of acute rheumatism, whereas, in fact, it is a mere complication not presenting itself in more than a quarter of the cases. It would be difficult, on the other hand, to diagnosticate pneumonia in the absence of its special lesion.

While in its salient features pneumonia stands widely apart from those insidious lung-consolidations which are apt to complicate and to hasten the termination of many chronic and fatal maladies, yet in minute anatomy the respective consolidations do not, the author thinks, greatly differ, the products of alveolar catarrh being in all cases more or less mingled with those more strictly exudative. But from phthisis, pneumonia from the first differs in the absence of any thickening or destruction of the alveolar walls. With reference to the morbid anatomy of the several periods of the disease, the author appears to us to speak too exclusively of the grey stage as a stage towards purulent destruction of the lung. He does not refer to the degeneration of the exuded products as a step towards recovery. The pathology of convalescence has in most diseases yet to be written; but respecting pneumonia this much at least is known, that the grey stage is common to both favourable and to unfavourable cases, but that in the one it proceeds to purulent infiltration, in the other its products are simply absorbed or expectorated. The woodcut showing the cell-proliferation within the alveolar wall no doubt indicates the true nature of the destructive processes. Many patients die in the grey stage of pneumonia, however, whilst the lung is undergoing normal retrogressive changes. It might be well in a future edition more definitely to point out the pathology of such retrogression.

The chapter on the etiology of pneumonia, although brief, yet contains the interesting results of much careful labour. It is here shown how a low temperature and an increased rainfall influence rather the mortality from bronchitis than from pneumonia; nor do damp and marshy districts specially favour the latter disease. Cold winds and elevated regions entailing brisk currents of cold dry air are favourable to the prevalence of pneumonia.

Dr. Sturges' ingenious explanation of minute crepitation is well-known, and is fully discussed in the first appendix; we need not now refer to it further. In discussing the treatment of the disease he refers to abundant statistics in appendix G; but he well points out the innumerable fallacies connected with such a method of gauging the efficacy of treatment in such a disease as pneumonia. And in truth, were

one satisfied with percentages, one would only rest amazed at the large proportion of individuals who have in the years that are past survived alike the disease and its remedies with which they were simultaneously attacked. Such figures, however, we must remember, inform us only as to the list of killed; they take no account of the wounded, and one may rightly conclude that but a small diminution in the mortality from this, as from any other disease, signifies a large increase in the genuine recoveries. Hence the results of the modern treatment of pneumonia are, we may hope, more encouraging than directly appears from statistics.

Dr. Sturges wisely counsels the alleviation of pain by such local measures as hot fomentations, and the application of a few leeches, and prefers the subsequent administration of a moderate opiate to secure rest, rather than endeavouring to obtain a troubled repose by narcotics alone. In certain cases, however, he would abstract blood more freely. He is inclined to regard the pulmonary hepatisation in pneumonia in the light of a hæmorrhage, as an escape into the lung from the surcharged blood of fibrinous material, it may be to the extent of three pounds. When the dyspnœa continues urgent after exudation has been completed, and provided there be no prostration, he would counsel venesection to ten or twelve ounces. And if, after an interval of marked relief from this practice, the dyspnœal symptoms should return, he would advocate a repetition of the bleeding. Various other points of treatment are discussed with equal judiciousness. The work is most commendable in its thoroughness, and will well repay a careful perusal.

Reminiscences of Obstetrical Practice. By H. SPÖNDLY, M.D., Professor in the Medical Faculty of the University of Zürich. Zürich: 1875.

Dr. Spöndly divides his experience under four heads. Firstly he describes what he calls an 'obstetric night,' wherein he was called to five labours, four being complicated, one a *post partum* hæmorrhage, and three requiring forceps; the sixth, which was also a complication, he was too exhausted to attend.

Secondly, he treats of retained placenta after abortion, and advocates most strongly their early removal. A succinct history of thirty cases is given. In one only was there a fatal result, in which labour had been induced for a dead fetus; the mother being much distressed with severe rigors. The fetus was putrid, as also the placenta, on its removal on the third day. Death occurred from metrophlebitis in the fourth week. Twice partial removal only was possible, but the hæmorrhage at once ceased. In one case the placenta was delivered in the tenth week from excessive metrorrhagia.

The result of his practice has made him come to the following conclusions.

1. One cannot depend upon the placenta being always spontaneously expelled with the fetus; and adhesions are unfrequent.

2. A retarded delivery of the placenta is always accompanied with considerable danger, especially from repeated floodings, which in the most favourable circumstances delay convalescence.

3. It is strongly to be recommended to remove the placenta with the fingers in the early stages, when the cervix is dilated sufficiently to admit at least one finger. Instruments are not necessary.

4. Injections of carbolic acid diluted in warm water should be used to remove portions of placenta which may be left *in utero*. These retained portions are much more frequent in ordinary abortions than with this operation.

5. Care should be taken to use no force to enter the uterus when it is closed without previous dilatation.

6. Midwives should be instructed to send for medical help whenever the ovum is incompletely expelled, as then the uterus, as a rule, would be found permeable.

Multiple births form the subject of the third division. Twenty-nine cases came under his immediate observation, of which one was triplets. Of these twenty-nine cases eleven were primiparæ, five in the second pregnancy, six in the third, two in the fourth, one in the fifth, one in the sixth, two in the ninth, and one in the tenth. Their relative ages were fourteen between twenty and thirty, fourteen between thirty-one and forty, and one over forty years. Three primiparæ were thirty-three, thirty-five, and thirty-eight years respectively. Two had already had twins. In one case the father was a twin, in another the mother. Five were prematurely confined (three to four weeks). There were seven maternal deaths: of these two had placenta præviæ; one, with triplets, had tuberculosis; and one puerperal convulsions, with contracted pelvis and tuberculosis. As to the position of the twins, eleven times there were two head presentations, six times head and breech, six times head and transverse, three times two breech-presentations, and three times breech with transverse presentation. As regards sex, ten times both were boys, eleven times girls, and eight times mixed. In twenty cases there were two placenta, frequently attached to each other; in nine cases one placenta. When the children are of the same sex, they spring no more frequently from one ovum than from two. The placenta was adherent four times. In fifteen cases the second birth occurred within the hour, and in nine between two and twenty-four hours.

Turning was performed by Dr. Spöndly 119 times, besides five times by external manipulation. In the latter case all the children were born alive. Of these 119 cases eighty-five were for shoulder, and two for hip presentations, fourteen for placenta præviæ, eight for transverse presentation with second child in twins, six for high oblique presentation of the head with other complications, and four for prolapse of the funis.

The mortality of the children was very great, viz. 63.9 per cent. The three great factors in its production were, the period of escape of the liquor amnii, the capacity of the pelvis, and the extraction.

The influence which the escape of the waters had upon the life of the child is well exemplified in the shoulder presentation. Out of eighty-five cases with thirty-one living children, with the exception of three the membranes had ruptured either just before or during the operation; whereas with the forty-five still-born children, twelve times the waters had broken from one to nine days before, nineteen at least two hours, and three only during turning.

The effect of contraction of the pelvis (that is, from 3 1/2" to 3") was that out of thirty-eight cases twenty-nine children were delivered dead and nine living; out of the twenty-nine still-born three may be deducted, as being complicated with other conditions. Out of these thirty-eight cases the waters had escaped in twenty-four long before the operation. Dr. Spöndly

declines to decide which was the most important factor in this result, the early rupture of the membranes or the pelvic contraction.

The influence of extraction in causing the death of the child has been universally accepted; out of seventy-six still-born children forty-eight were dead before turning; out of the remaining twenty-eight, thirteen died during extraction, and fifteen apparently dead soon became so. He considers that extraction takes its place next to the early ruptures of the waters in the causation of death.

The maternal mortality was very great, 13·4 per cent.; six had shoulder presentations, seven placenta prævia (out of fourteen), two twins, and one ovarian tumour.

As to the ages of the women and the number of the pregnancy, between the ages of twenty and thirty there were sixty-four cases; between thirty-one and forty, forty cases; and fifteen between forty-one and fifty. In these three decades, with first pregnancy there were nine cases, seven in the first decade, and two in the second. With the second and third pregnancies there were forty-nine cases, of whom thirty-seven were in the first decade, seven in the second, and five in the third. With the fourth, fifth, and sixth pregnancies forty-three cases, of whom seventeen were in the first class, twenty-one in the second, and five in the third. Over 57 per cent. of the cases were with second, third, and fourth pregnancies.

[The great mortality of the children and of the mothers, especially of the latter, in placenta prævia, is very remarkable, and decidedly out of all proportion to the experience of consulting physicians in England. It is the result of Dr. Spöndly's private and consulting practice; the majority were, however, consultations with professional brethren and midwives.—*Rep.*] W. C. GRIGG, M.D.

The Development of Ova, and the Structure of the Ovary, in Man and other Mammals. By JAMES FOULIS, M.D. (Edin.) Reprinted from the Transactions of the Royal Society of Edinburgh, vol. xxvii. 1875.

After giving a brief history of his subject and an abstract of the views of Pflüger and Waldeyer, Dr. Foulis describes the results of his own observations on the ovaries of calves, kittens, and the human female. The following is a brief summary of these results.

The corpuscles of the germ-epithelium are derived by direct proliferation from the columnar corpuscles investing the median side of the Wolffian body, and which are continuous with the columnar corpuscles lining the pleuro-peritoneal cavity in the embryo in its early stages of development. The stroma of the ovary is derived from the direct outgrowth of the interstitial tissue of the Wolffian body which lies immediately below these columnar corpuscles.

The germ-epithelial corpuscles proliferate by fission. In the human foetal ovary of 7½ months they measure $\frac{1}{2500}$ to $\frac{1}{2000}$ of an inch in their longest diameter, and $\frac{1}{3000}$ of an inch in their shortest. Each corpuscle is a nucleus surrounded by a thin film of clear protoplasm. The nucleus becomes the germinal vesicle of the mature ovum, and every germ-epithelial corpuscle is potentially an ovum. In order to form the ovum the nucleus swells, becomes spherical and nucleated, and around it clear homogeneous protoplasm is produced which forms the yolk.

Germ-epithelial corpuscles can be seen in all stages of development into ova. All the ova are so derived. The germinal vesicle possesses a sharply defined, limiting membrane.

The germ-epithelial corpuscles are gradually embedded in the stroma of the ovary by the vascular connective tissue which forms it growing in between and around them. At first groups are so separated; but eventually each one is separated from its neighbour. New corpuscles are formed on the surface to replace those imbedded, and those imbedded increase by division.

The stroma of the young ovary consists for the most part of fusiform connective-tissue-corpuscles and blood-vessels. The walls of the vessels are formed of these connective-tissue-corpuscles.

The connective-tissue-corpuscles are found in close contact with the yolk of each primordial ovum as it becomes separated from its fellows. In all parts of the ovary the nuclei of the connective-tissue-corpuscles are found dividing; sometimes they are seen swollen out into round bodies containing three or four nuclei.

The meshes of connective tissue which grow in between and separate the ova in the egg-clusters as they surround a single ovum form the Graafian follicles. As a rule each Graafian follicle only contains one ovum. The wall of the Graafian follicle with its connective-tissue-corpuscles is in close contact with the yolk, and the latter indent it. The membrana granulosa is formed by the division of these connective-tissue-corpuscles which lie in contact with the yolk, their nuclei swelling out into little vesicles, and eventually forming a perfect cap-ule round the egg. At first the membrana granulosa or follicular epithelium consists of a single layer of cells, measuring about $\frac{1}{3000}$ of an inch in diameter. The corpuscles of this single layer afterwards proliferate, and many layers are formed. The cells of the membrana granulosa are thus derived from the corpuscles of the connective-tissue-stroma, and not, as Waldeyer states, from the germ-epithelial corpuscles.

The follicular space is formed by the breaking down and probable solution of some of the corpuscles of the thickened follicular epithelium. The discus proligerus consists of the follicular epithelial corpuscles in contact with the zona pellucida of the ovum. The zona pellucida or vitelline membrane is formed by the hardening of the outer part of the yolk or protoplasm of the ovum, and is not, as stated by Reichert, Pflüger, and Waldeyer, a product of the follicular epithelium. At birth, the human ovary contains about 30,000 ova, few of which reach maturity.

In the human ovary at birth, the germinal vesicle measures $\frac{1}{1500}$ to $\frac{1}{1200}$ of an inch. Some contain two or three germinal spots. The tunica albuginea is the thickened stroma growing round the ovary. At the age of two and a-half, all formation of ova from the germ-epithelium has ceased.

Graafian follicles are not formed from tubular structures in the way described by Pflüger, Spiegelberg, and Waldeyer. The appearances of tubular structures are produced by sections through furrows and depressions between irregular prominences on the surface of the foetal ovary. These prominences are produced by the expansion of the egg-clusters under the germ-epithelium. If the walls of these furrows come into contact, egg-clusters may be thus formed, just as by the usual embedding process.

At the age of six years the epithelium on the ovary consists of very small flat hexagonal cells, measuring $\frac{1}{2500}$ to $\frac{1}{3000}$ of an inch. The corpuscles are seen dividing. This layer can be stripped off without difficulty. At the age of twelve there is little change. The epithelium is beautifully seen in old cats; it must be regarded as homologous with the peritoneal epithelium. In these old cats the epithelium on the surface of the ovary consists of small distinct cells, measuring from $\frac{1}{1800}$ to $\frac{1}{2000}$ of an inch, with granular oval nuclei. Dr. Foulis's paper is enriched by five beautiful lithographic plates, each containing many figures, and all copied from drawings made by himself, with the aid of the camera, from his own preparations.

J. KNOWSLEY THORNTON.

A Text-Book of Electricity in Medicine and Surgery, for the Use of Students and Practitioners. By GEORGE VIVIAN POORE, M.D. Lond., M.R.C.P., etc.; Assistant Physician to University College Hospital; Senior Physician to the Royal Infirmary for Children and Women; Fellow of University College; University Scholar in Medicine; Commander of the Dannebrog, etc. Pp. 291. London: Smith, Elder & Co. 1876.

Every now and again one hears a deep growl from some medical Thersites about young fellows writing medical books. The growl generally comes from some middle-aged medico who has never written a book himself. The self-appointed critic, not without some show of reason, urges that what the medical public want is experience. 'What,' he says, 'can these young fellows know about it? Here's a big book from one of them, with more chapters than its writer has years, and almost as many pages as there are days in his life. We want books from our Nestors and Ulysses, not from those beardless and embryonic authors, who only scribble to get the practice about which they profess to write!' Granting that there may be some grains of truth in these remarks, their author would be forced to confess that there are some subjects on which young authors may write better than older ones. Such a subject as the one Dr. Poore has selected is an instance in point. The older school of physicians and surgeons, with few exceptions, agreed to ignore the uses of electricity in medicine. The sum total of all that the student was taught a few years ago at our Medical Schools was something to this effect: 'There are three or four kinds of electricity, and about as many hundred kinds of electric machines. You can kill a man with some of them. You can give shocks with most of them. They are all very pretty playthings, and may certainly prove useful in detecting malingerers, and in curing ideal or hysterical paralysis.'

Thanks to Duchenne of Boulogne, such flippant teaching is scarcely possible any longer at any of our Medical Schools. Drs. Russell Reynolds and Radcliffe, Mr. Netten Radclyffe, Mr. Tibbits, and others, have both by their writings and their practice shown us that, imperfect as our knowledge of electricity is, we are slowly accumulating a mass of facts which will by-and-by prove of the greatest value both to diagnosis and therapeutics. Dr. Poore, if we mistake not, accompanied the Great Eastern steamship on several of her cable-laying trips; and ever since he began to practice as a physician has taken a deep interest in the subject of electricity—has lectured

upon it, and has proved clinically its uses in that class of diseases which he justly calls 'fatigue diseases,' foremost amongst which is 'writer's cramp,' or 'scrivener's paralysis.' These lectures and articles by him, from the *Practitioner* and the *Lancet*, form the basis of the present volume. No one can complain that it is too long. Something less than 300 pages are made to contain almost everything that we really know about the uses of medical electricity. Besides this, the intelligent reader who already knows a little of what we may call the anatomy of galvanic batteries, will be able to discover for himself, by the aid of Dr. Poore's book, what any form of battery he has can effect, and how to make and repair others. We say the reader who already knows a little, designedly—for this is the only weak point of the book, that Dr. Poore trusts a little too much to the reader's previous knowledge. This is a pity, for he writes with great clearness, and his descriptive writing is concise as well as clear. The first edition is sure to sell, and in a second and subsequent editions we trust that Dr. Poore will not take it for granted that his readers have any knowledge at all on the subject. Let him begin at the very beginning, and not assume any prescience on the part of the medical public. We can assure him that there are hundreds of medical readers who do not know one pole or electrode of a battery from the other, and who could not tell how to distinguish them, even to save their lives. This is not their fault, but the fault of their teachers in part, and in part of the general ignorance of the profession on these subjects. A few more illustrations would be needed, and one or two of those used in this edition should be changed. Such an illustration as the one on page 19, for instance, is certainly not clear to the ordinary reader, nor is it elucidated by the text. It is a matter of some interest to those who have tried many forms of battery to find that Dr. Poore confirms M. Tripier's opinion as to the long time during which the Leclanché element batteries [patented by the India-rubber and Telegraph Company (Limited), but sold by Messrs. Weiss for medical purposes] will keep in good working order. He says that, after using one in his lectures, it was put away, without any care, in a cupboard, and found still in working order, after more than nine months of neglect. It is, however, not so useful when the battery is to be used for caustic purposes, the destruction of tumours, such as nævi, &c.

The chapters into which this book is divided are the following: Chapters I., II., and III. are on Principles, Batteries, and the Physiology of Electricity; Chapters IV. and V. are on the Methods of Using it, especially its Diagnostic Uses; the next three chapters are on Electricity as a Stimulant, as an Anodyne and Sedative, and as a Caustic; the last two chapters (IX. and X.) are on the Treatment of Internal Aneurisms, and on Electricity as a Cautery.

To make long extracts would not be fair to the author, as the book is of pocket size. A short extract will, however, convey some idea of the style and of the careful attention to details which distinguishes all that Dr. Poore writes. Speaking of the combined use of artificial respiration with faradisation, in cases of drowning and suspended animation from suffocation, chloroform-accidents, etc., he says (page 143):

'In cases requiring artificial respiration, every moment is of importance, and Sylvester's method of producing it should in all cases be at once resorted

to while the faradising apparatus is being sent for, or is being got ready for use. When the faradising apparatus is ready, faradising may be superadded to Sylvester's method. . . . Lay the patient flat on a table, with the neck thoroughly extended, and the head turned to the left side, so as to prevent the tip of the tongue from falling against the roof of the mouth, and acting as an obstructive valve, and so that the right phrenic nerve may be reached with the rheophore, in the manner indicated, while treating of the application of electricity. One person should carry out Sylvester's method, while another attends to the faradisation. . . . The person who has charge of the faradisation should stand on the right side of the patient, and should press one rheophore well down on the phrenic nerve in the neck, and then when his coadjutor raises the patient's arms to cause inspiration, he should place the second rheophore on the right side of the thorax, on a level with the sixth intercostal space. When the patient's arms are depressed again, he should remove his thoracic rheophore, and make connection when they are again pulled above the head. This should be repeated not more than about twenty times in a minute. If it is effectual a distinct rush of air should be heard whenever the circuit is made. Too strong a current must not be used. A current of such strength as will produce contraction of the muscles of the ball of the thumb should be sufficient.

* 'Some writers advise that the rheophores should be placed upon either side of the neck, on the motor points of the phrenic. We do not recommend this, because of the risk of irritating the pneumogastric nerves too strongly, and so causing the stoppage of the already feebly acting heart. It is not advisable to put either rheophore near the heart. If we can get fresh supplies of oxygen into the lungs, the action of the heart will gradually return to its normal condition, provided the patient be not past recovery.'

The book would be worth purchasing if only for the sections on 'Writer's Cramp,' and is certainly the best manual of medical electricity which has yet appeared.

Vidago, Agua Alcalino-Gaseosa, por el licenciado D. JUSTO DE HARO Y ROMERO. 12mo, pp. 16. Madrid, 1874.

This little brochure, written in Spanish, calls attention to one of the numerous Portuguese thermal waters, of which little is known in England. We wish that it had given a more detailed account of the place.

We learn from the pamphlet and from other sources that Vidago is a new name given to the old Caldas de Chaves, which have been known since the days of the Romans. The baths are situated in the most northerly part of Portugal, not very far from Oporto. They are in a mountainous country, and on the banks of the river Tamega. The neighbourhood is picturesque; there is a good new hotel, with billiards and a garden, and a modern bathing establishment. The waters vary in temperature from 110° to 120°. In mineral constituents they closely resemble those of Vichy, as will be seen by comparing the chief constituents in 10,000 parts of the water of Vidago with that of the Grande Grille at Vichy:

	Grande Grille.	Vidago.
Carbonate of Soda . . .	37.7	46.2
" Potass. . . .	2.7	4.8
" Magnesia. . .	.5	2.5
" Lime . . .	3.1	9.7

Vidago would thus seem to have more soda and more lime than Vichy and less potass and magnesia. It has also a little more iron; but the quantity of that substance and of lithia present are for practical purposes insignificant.

Our small tract gives no hint as to the abundance or otherwise of the waters of Vidago, but if the supply be sufficient, they must be in every way an efficient substitute for Vichy, and all the cases which derive benefit from Vichy should be suitable for treatment at Vidago. The waters contain a good supply of carbonic acid, and are therefore adapted for bottling, and already 300,000 bottles are despatched every year.

We hear little of Portugal now-a-days as a climate for invalids. But though too moist during the winter season—especially in November, December, and January—it offers very considerable advantages during spring. It is in the early part of the year only, before the great summer heats set in, and before the more northern spas are open, that there is much chance of English resorting to the baths of Spain and Portugal. We have recently heard of some English who visit Lisbon in spring and then proceed to the baths of Vidago. Portugal, it may be well to remember, retains its ancient superiority over most parts of Europe in its supply of excellent butcher's meat.

The Sanitary Powers of the Iron Springs of Schwalbach. By RUDOLPH BIRNBAUM, M.D. 8vo. pp. 63, Berlin, 1876.

This balneological essay, as the author very properly styles it, gives a fair and competent account of the operation of the waters of Schwalbach. They are treated of chiefly in reference to the diseases of women and children. Dr. Birnbaum's essay appears to contain no novelties, and not to be founded on extended experience. The author has translated his essay into English in a way on the whole creditable to him, but it is a pity that he did not submit it for revision to some English friend. As no details or local information are given, we presume that the essay is meant chiefly for the medical profession. Schwalbach and its virtues are now pretty well known to English practitioners, and it has long been a favourite resort for English and Russian patients. The waters are excellent of their class, and the situation of Schwalbach is very convenient for English travellers, being close to Wiesbaden and not very far from Frankfort.

J. MACPHERSON, M.D.

RECENT FRENCH BOOKS.

Published by J. B. Baillière and Sons.

La folle du doute (avec délire du toucher), par le docteur Legrand du Saulle. Prix: 2 fr. 50 c.

La vie et ses attributs dans leurs rapports avec la philosophie et la médecine, par E. Bouchut.

La gymnastique raisonnée, moyen infailible de prolonger l'existence et de prévenir les maladies, par Eugène Paz, directeur du grand gymnase médical; 1876. Prix: 5 fr.

Sur le traitement des maladies des femmes au moyen de la méthode du massage, par Gustaf Norström, docteur en médecine de Stockholm. A. Paris, librairie Nilsson, rue de Rivoli, 212.

De l'emploi des préparations arsénicales dans le traitement des maladies du cœur, par le docteur Louis Bouyer, de Saint-Pierre de Fursac (Creuse).

Leçons cliniques sur les maladies des femmes, par le docteur T. Gaillard. Prix: 12 fr.

Published by V. A. Delahaye & Co.

- Clinique médicale, par le docteur Noël Gueneau de Mussy, 2 vol. in-8. Prix : 24 fr.
- Des névroses menstruelles ou la menstruation dans ses rapports avec les maladies nerveuses et mentales, par le docteur Berthier. 1 vol. in-8. Prix : 5 fr.
- Leçons sur les maladies du système nerveux, faites à la Salpêtrière, par le docteur Charcot, recueillies et publiées par le docteur Bourneville, 2e édition revue et augmentée, tom 1er 1 vol. in-8, avec 27 figures dans le texte, 9 planches en chromolithographie et une eau forte; le vol. cartonné. Prix : 13 fr. Tome 2e, 1er fascicule : Anomalies de l'ataxie locomotrice; 2e fascicule : De la compression lente de la moelle épinière. In-8, avec 2 planches, prix de chaque fascicule. 2 fr. 3e fascicule, Des amyotrophies spinales, in-8. avec fig. et pl. Prix : 4 fr.
- Traité pratique des maladies du cœur, par Friedreich. Ouvrage traduit de l'allemand par les docteurs Lorber et Doyon. 1 v. in-8 cartonné. Prix : 10 fr.
- Leçons sur le strabisme, les paralysies oculaires, le nystagmus, le blépharospasme, etc., professées par F. Panas, chirurgien de l'hôpital Lariboisière, professeur agrégé à la Faculté de médecine de Paris, chargé du cours complémentaire d'ophtalmologie, etc., rédigées et publiées par G. Lorey, interne des hôpitaux; revues par le professeur, 1 v. in-8, avec 10 fig. dans le texte. Prix : 5 fr.
- Traité élémentaire des maladies de la peau, par A. Gailleton, (maladies cutanées et vénériennes). 1 vol. in-8. Prix : 6 fr.
- Clinique médicale des affections du cœur et de l'aorte, observations de médecine traduites de l'anglais par le docteur Barella, etc. (le tome 1er est en vente, le tome II paraîtra prochainement), in-8. Prix : 6 fr.
- Étude clinique de la phthisie galopante, preuves expérimentales de la non-spécificité et de la non-inoculabilité des phthisies, par le docteur Metzquer; ouvrage précédé d'une préface de M. le professeur Feltz, in-8. Prix : 4 fr.
- Des infiniment petits rencontrés chez les cholériques, étiologie, prophylaxie et traitement du choléra, avec planches micrographiques, par le docteur G. Danet. 1 vol. in-8. Prix : 5 fr.
- Histoire de la vaccination. Recherches historiques et critiques sur les divers moyens de prophylaxie thérapeutique employés contre la variole depuis l'origine de celle-ci jusqu'à nos jours, par le docteur E. Monteils, médecin des épidémies. 1 vol. in-8. Prix : 7 fr.

Published by G. Masson.

- Traité des maladies de la peau, comprenant les exanthèmes aigus, par M. le professeur Hébra (de la Faculté de Vienne); traduit par M. le docteur Doyon, médecin inspecteur des Eaux d'Uriage. 2 vol. gr. in-8o compactes. Prix : 25 fr.
- Étude sur le goître et sur le crétinisme, par Marx Parchappe. Prix : 10 fr.
- De l'ictère hémétique traumatique, par M. le docteur A. Poncet. Prix : 2 fr. 50 c.
- Étude sur la physiologie, par M. F. Coyteux. Prix : 12 fr.
- La responsabilité criminelle et la capacité civile dans les états de trouble intellectuel, par M. le docteur Krafft-Ebing. Traduit de l'allemand par M. le docteur Chatelain. 1 vol. in-8. Prix : 5 fr.
- La syphilis et la prostitution, dans leurs rapports avec l'hygiène, la morale et la loi, par M. le docteur Hyppolyte Mireur. 1 fort volume in-8. Prix : 10 fr.
- Recherches statistiques sur l'étiologie de la syphilis tertiaire, par M. le docteur Louis Jullien. 1 vol. in-8 avec nombreux tableaux. Prix : 3 fr.
- Études précises sur la déformation de la poitrine avec application à la pleurésie et à la phthisie. Indice thoracique, par M. le docteur Émile Fourmentin. 1 vol. in-8 avec 14 figures dans le texte. Prix : 3 fr. 50 c.

RECENT GERMAN BOOKS.

- Leben und Sterben in Weimar und einigen Nachbarorten. Weimar: Hochmann u. Co. 1876.
- Dr. H. Schoeler, Jahresbericht über seine (früher Ewers'sche) Augenklunik im Jahre 1875. Berlin, 1876.
- Dr. Ew. Hecker, Anleitung für Angehörige von Gemüths- und Geisteskranken zur zweckmässigen Fürsorge für ihre Patienten vor und nach Uebersiedelung in eine Anstalt. Berlin, 1876.
- Dr. Otto Dammers, Kurzes 'Chemisches Handwörterbuch.' Berlin, 1876.

- Dr. G. Beck, Kleiner Recept-Almanach 1874 und Recept-Almanach 1875-76. Zürich, 1876.
- Dr. A. Biermann, Das Ober-Engadin. Leipzig, 1875.
- Dr. L. Kugelman, Wie ist die Sterbl. b. Scharlach, Masern und im Wochenbett auf ein Minimum zu reduciren? Hannover, 1876.
- Prof. Dr. H. E. Richter, Ueber Milch- und Molkenkuren. Leipzig, 1876.
- Dr. L. Hirt, System der Gesundheitspflege für Universität und ärztliche Praxis. Breslau, 1876.

RECENT ITALIAN BOOKS.

- Fumagalli, Cesare, La Chirurgia sui bambini. Milano : Dumolard. 1876.
- Moriggia, A., Sperienze sulla fecondazione artificiale negli animali. Roma: 1875.
- Albani, Ignazio, Di un caso di necrosi totale di tutto il terzo superiore dell'omero. Ragusa, 1875.
- Brota-Giurleo, Nestore, Corso di geografia, fisica, e storia naturale. Napoli: Eschona, 1876.
- Amabile, Prof. L., Considerazioni sulla cura delle fistole vescico-vaginali con la dimostrazione di alcuni nuovi strumenti per operarle. Napoli, 1876.
- Bianchi, Dott. Leonardo, La elettroterapia. Napoli, 1876.
- Bizzozzero, Prof. Giulio, Crup e difterite. Torino, 1875.
- De Giovanni, Prof. A., Comunicazioni intorno al diabete zuccherino ed intorno alla meningite cerebro-spinale epidemica. Milano, 1876.
- Dell'Acqua, Dott. Felice, Mamma e bambino. Annotazioni della madre sulla salute dei suoi bambini. Milano, 1876.
- Giannuzzi, Prof. G., Ricerche eseguite nel gabinetto di Fisiologia nella R. Università di Siena. 1875.
- Maragliano, Dott. Edoardo, Il vaiuolo. Conferenze cliniche. (La febbre nel vaiuolo). Roma, 1876.
- Moriggia, Prof. A., e Bastianini, Dott. Attilio, Sulla velenosità naturale dell'estratto di cadavere umano. Roma, 1875.
- Moriggia, Prof. A., e Ossi, Dott. G., L'amigdalina; sperienze fisio-tossicologiche. Roma, 1875.
- Bianchi, Dott. Luigi, Linfadenoma, morte per embolismo. Osservazioni. Cingoli, 1875.
- Bianchi, Dott. Achille, Sulla cura degli infermi ricoverati nell'ospedale di S. Spirito negli anni 1873-74. Relazione statistica e osservazioni. Roma, 1875.
- Foa, Dott. Pio, L'anatomia patologica e le altre scienze mediche. Prelezione. Modena, 1876.
- Lussana, Prof. Filippo, Sull'ufficio dei corpi striati encefalici, specialmente nel loro supposto rapporto fisio-patologico col senso tattile e colla catalessi. Padova, 1875.
- Mosso, Dott. A., Sui movimenti idraulici dell'iride e sull'azione dei mezzi che servono a dilatare o restringere la pupilla. Esperienze. Torino, 1875.
- Mosso, Dott. A., Sopra un nuovo metodo per scrivere i movimenti dei vasi sanguigni nell'uomo. (Con 17 incisioni intercalate nel testo). Torino, 1875.
- Petrone, Dott. Angelo, L'inflamazione della cartilagine (con 67 figure in 17 tavole). Napoli, 1875.
- Piga, Prof. Pasquale, Rendiconto di clinica chirurgica nell'Università di Sassari. 1875.
- Schiff, Prof. Maurizio, La fisica nella filosofia. Discorso inaugurale, ec. Firenze, 1875.
- Corrado, Tommasi-Crudeli, Sommario delle lezioni di anatomia patologica, fatte durante l'anno 1874-75 nella R. Università di Roma. Vol. i.; anatomia patologica generale, con 49 incisioni. Loescher: Torino, Roma, Firenze, 1876.
- Mazzotti, Dott. Luigi, Sulla tubercolosi miliare acuta, studio patologico e clinico. Bologna, 1875.
- Berruti, Luigi, Lezioni sulla igiene pubblica e privata, esposte nell'anno accademico 1875-76.
- Morselli, Enrico, La trasfusione del sangue, con 25 incisioni. Torino, Roma, Firenze, 1876.
- Peruzzi, Domenico, Sull' Ovariotomia considerata nella sua storia, indicazioni, controindicazioni e prognosi. Milano.
- Barduzzi, Domenico, Avviamento alla diagnosi ed alla terapia delle malattie della pelle. Milano, 1875.
- Chiarleoni, Giuseppe, Osservazioni di termometria clinica nello stato puerperale. Tesi di concorso. Torino, 1875.

MISCELLANY.

THE FORCE OF EXAMPLE.—Following the example of the French capital, the municipal council of Lyons has voted a credit of 5,000 francs for the creation of a night medical service in that city.

DEATH AND BURIAL.—M. Dugate has just founded a quinquennial prize of 2,500 francs to be awarded to the best work on the signs of death and the means of preventing premature burial. The prize will be awarded by the Académie des Sciences for the first time in 1880. The theses will be received at the Secretarial department of the Institute up to June 18, 1880.

THE MEDICAL COLLEGE, CALCUTTA.—Dr. F. N. Macnamara, whose name is connected with the establishment of the Campbell Medical School and Hospital, was, on his recent retirement from the post he held at the Medical College at Calcutta, present by the Graduates and students with an address, expressing their sorrow at the prospect of his departure from India. His name is to be preserved in the College by the foundation of a Chemical Prize.

At a recent meeting of the Sedgwick Memorial Committee at Cambridge, the treasurer announced that the fund amounted to 11,500*l*. This sum is, however, insufficient for the purpose of erecting a Museum worthy as a building to commemorate the late Professor, and it is hoped that additional subscriptions will still be forthcoming. It is intended that the Museum should form part of a group of buildings for Natural Science purposes. The whole question is under the consideration of a Syndicate.

NIGHT MEDICAL SERVICE IN PARIS.—Since January 6, when this service commenced operations, up to March 1, the medical men who proffered their services to the authorities have made 630 visits, which may be classified as follows:—Thirty-five of the cases have paid their fees directly to the medical attendant; 215 fees have been recovered by the authorities; 300 seem to have remained unliquidated. The average of visits made throughout Paris amounts to twelve each night.

The Gazette d'Augsbourg states that a young lady has taken her degrees in medicine, surgery, and obstetrics with honours, at the University of Zürich, after having attended the courses during nine consecutive half-yearly terms. This young doctor, whose name is Mdle. Francesca Tiburtias, a native of the Isle of Rugen, read a lecture on the use of protoxide of nitrogen in operations, and, it is said, acquitted herself brilliantly in her theses. The Dean of the Faculty of Medicine made a little speech to her, in which he did justice to her zeal, capacity, and perfect tact.

THE Medical Association of the Bouches-du-Rhône, which has its head-quarters at Marseilles, has instituted an annual and permanent competition in medical and surgical instruments, either of a novel kind or having undergone improvement. The instruments sent to the competition in the course of the year will become the property of the Association; the inventors whose instruments are selected for reward, will receive either a gold, silver, or bronze medal, or an honourable mention, which will be delivered to them at the general meeting of the Association which takes place annually in the April of each year. The instruments should be sent to the Society's rooms at No. 25, Rue de l'Arbre, Marseilles.

STATISTICS OF MARRIAGES AND BIRTHS IN THE GERMAN EMPIRE IN 1873.—From the official report we notice that there were 416,048 marriages, of which 252,567 were in Prussia. There were 1,715,132 births, of which 882,945 were males, and 832,186 females; one, sex undetermined. Of these 67,165 were still-born. Among the infants born alive 1,498,283 were legitimate, and 170,097 illegitimate—a proportion of 1 in 10. There were a

greater number of still-born children among the illegitimate, viz. 59,337, whilst there were only 7,827 among the legitimate, or 13 per cent. The total number of deaths during the year was 1,241,120, of which 647,206 were male, and 593,193 females. The number of births exceeded the deaths by 474,012.

LECTURES ON ZOOLOGY.—A series of lectures upon zoological subjects will be delivered after Easter in the Zoological Society's Gardens, in Regent's Park, on Thursdays, at 5 P.M. The following are the titles, together with the days on which they will be delivered by the respective lecturers:—April 27, Mr. P. L. Sclater, F.R.S., on the Society's Gardens and their Inhabitants; May 4, Professor Flower, F.R.S., Rhinoceroses and Tapirs; May 11, Professor Flower, Horses and Zebras; May 18, Dr. J. Murie, the Manatee; May 25, Professor Garrod, On Birds; June 1, Professor Mivart, On Bats; June 8, Mr. Tegetmeier, On Homing Pigeons; June 15, Professor Garrod, on Reptiles; Mr. J. W. Clark, on the Beaver and its distribution; June 29, Dr. Carpenter, on the Zoological Station at Naples.

AN ITALIAN LOUISE LATEAU.—For some time a rumour has been current in Turin that the city was so fortunate as to possess a miracle-working nun. Every Friday stigmata showed themselves on the forehead, hands, and feet of a holy nun of the hospital of Cottolengo. The authorities, wishing to assure themselves of the reality of the miracle, caused the nun to be examined by the professors Pacchiotti, Rovida, and Giacomini. The medical men made a report that, in the first instance the patient was in a state of great exaltation, which induced her to try to imitate the wounds of the crucified Christ, a *ruse* which, however, had not been successful up to the present time. Secondly, the wounds were produced by sharp instruments, such as needles or pins, and every Friday, when they were nearly healed, they were renewed with the same instruments. The surgeons recommended that the patient should be taken to a hospital to be watched over and cured—a recommendation which has been carried out by the authorities.

ARTIFICIAL DISFIGUREMENT OF THE TEETH AMONG DIFFERENT NATIONS.—At a meeting of the Anthropological Society in Göttingen, Herr von Ihering, after a brief sketch of the principal artificial disfigurements of the teeth in use among different nations, partly for the requirements of their health, partly from hurtful toilet operations, spoke as follows:—The disfigurements of the teeth are substantially of three kinds: 1st. Painting the teeth with red or black colours (Borneo, Birma); 2nd. Knocking out one or more of the incisors in the upper or lower jaw, practised among certain tribes in Australia and Central Africa; 3rd. Mutilation of the form of the tooth whilst preserving the tooth itself. Many tribes from the interior of Africa cut the incisors with the chisel in such a manner that they are sharpened to a point, or so that the point comes in the centre of each incisor, or by apparent prolongation of the edge, on one side or both, they are double-pointed. In the islands of the Malay Archipelago we find filing between teeth (almost always regularly coloured by betel-nut-chewing) in two typical forms: 1st. Removal of the enamel from the entire front surface of the crown of the incisors by horizontal filing and polishing, a kind of mutilation characteristic of the Malays of the East Indian Archipelago; 2nd. Filing in such a manner that the enamel is removed from the front surface with the exception of a three-sided portion, of which one side represents the incisor. The tooth is generally so pointed from the removal of the side part that the remaining enamel of the tooth has a rhombic form. This form is only found upon four islands, Java, Boli, Madura, and Celebes, and has not been observed until quite recently, for Virchow and A. B. Meyer considered the pointed filing of the teeth the characteristic of these islands. The Malay skull, mentioned by Virchow in the Wiesbaden collection, belongs to the

same group. Meyer's idea, that this second form of filing occurred amongst those aborigines fallen into slavery in the Mentavey island, is most improbable, as Von Ithering had met with this example in entirely separated collections, in all of which these four islands were given as their home. It must, therefore, be concluded that these deformities are, or have been, native to these islands, although at present no conjecture has been brought forward to which nation it is peculiar, or whether it is a sign of position in life.

EXTINCT ANIMALS.—A recent lecture at the Royal Institution by Professor Flower, F.R.S., was devoted to an account of discoveries recently made of a vast number of fossil remains of animals which lived in North America during the Tertiary period, especially those found in the eocene strata of Wyoming, Colorado, and New Mexico, only explored since 1869 chiefly by the United States geological survey of the territories under Dr. F. V. Hayden. Of the remains particularly selected for description many are of animals unlike any now existing, or found fossil elsewhere, and many constitute connecting links between living forms now widely separated. There are also many the relations of which have not yet been satisfactorily determined, as the materials have accumulated so rapidly that the united labours of the observers engaged in describing them, especially Professors Leidy, Cope, and Marsh, have not been sufficient as yet to make them fully known to us. Among the most remarkable of these animals are a number of gigantic species, to the first discovered of which the name *Uintatherium* was applied—from the Uintah mountains, near which it was found—in form and size somewhat intermediate between the elephant and the rhinoceros, but differing in some respects from both, and having three pairs of great horn-like projections on the top of the head, and huge trenchant canine tusks. These animals, which were entirely unknown five years ago, have been found in such abundance that the museum of Yale College alone now contains remains of more than a hundred individuals, some of them in excellent preservation. There are also large rhinoceros-like animals with a pair of horns side by side on the nose, and various new kinds of carnivora, rodents, lemurs, etc. Many new forms of the horse and of the camel family have also been found.

DR. ATLEE ON WOMEN AS OBSTETRIC PHYSICIANS.—The following remarks, extracted from Dr. Atlee's address to the Pennsylvania Medical College (*Transactions of the Medical Society of the State of Pennsylvania*, vol. x. part ii.) may not be uninteresting at the present time. Speaking of the Pennsylvania Woman's Medical College, Dr. Atlee says: I allude to the Woman's Medical College. In the days of old physic such a phenomenon as a medically educated woman was unknown, at least in this country. An ignorant fussy old woman, known as 'granny,' officiated on important occasions; and even within the present century was the principal midwife. I venture to assert that many of our most eminent men—physicians, divines, and statesmen—entered this world having their passport *visé* by this important official. It was not until Professors James and Dewees instructed medical practitioners of this country in their proper duties that these uneducated obstetricians began to disappear, and the midwife gradually merged into the more intelligent and more dignified accoucheur. Yet even to this day, in some sections of the country, the services of this old lady are preferred. In the management of the lying-in room, in the most trying position of woman, the substitution of an educated for an ignorant attendant has been a great advance over the past. If uneducated women were the chief practitioners of midwifery in former days, and proved themselves competent in proportion to their knowledge, then we should hail the medically educated woman who will also fulfil her duties according to her acquirements. I know that in the opinion of many, the establishment of a medical college for the education of women is of doubtful expediency, yet I view it as a work in the proper direc-

tion. It is the obvious right of woman to engage in all occupations and professions suited to her ability and her sex, and it affords me much pleasure to announce that after much opposition this society has assumed a correct position on this question. Anatomically and psycho-physiologically the sexes are different; but if we view this difference free from the influence of prejudice, self-interest, and custom, we will find that, so far as the study and practice of medicine are concerned, our organisation has nothing to give it material superiority over that of our sisters. In certain branches of our art, such as the department of operative surgery, particularly in capital operations, we would doubt woman's qualifications; but in the more quiet pursuits of the profession, much can be said in favour of the peculiar qualities of woman over those of man. No doubt there are exceptional women so constituted that they would achieve even brilliant success in surgery. Even among men great surgeons are comparatively few; the majority of medical practitioners being incompetent, from various causes, to practice operative surgery. If, then, we exclude the greater achievements of surgery, which also embrace certain operations in obstetrics, is there anything peculiar in the organisation of woman to interfere with her ability of becoming qualified to fulfil most other duties of the profession? Can she not treat diseases, both surgical and medical, as well as her brother practitioner? Can she not conduct an ordinary case of parturition with the same care and dexterity as the majority of medical men? Can she not with more propriety and acceptance, and with equal success, treat her own sex for that long catalogue of troubles peculiar to them? Can she not minister to the ills and afflictions of infancy and childhood with greater gentleness and equal skill? Even in the minor operations of surgery; in many of the operations on the eye, the ear, the teeth; in the dressing of wounds, and in many other troubles, where delicate and nice manipulation is necessary, educated woman is peculiarly fitted by nature to render aid.

THE MOSAIC CODE AND VITALITY.—Dr. Benjamin W. Richardson, F.R.S., delivered a lecture on March 26 at the Jews' Infant School, Commercial Street, Whitechapel, upon the 'Vitality of the Jews and the Mosaic Sanitary Code.' Dr. Richardson traced through different ages of life the comparative mortality of the Jews and others. In Prussian Germany there was one still-born in 97.75 among Jews, one in 47.29 among Catholics, one in 42.47 among Protestants. These were the statistics of legitimate children; of illegitimate births there were few among the Jews, but a large proportion of the children so born survived. Mayor estimates from the statistics at Fürth that the Jewish children under five die only at the rate of 10 per cent., while the Christian children of the same age die at the rate of 14 per cent. Neufville, making the same observations at Frankfurt, finds that during the first five years of life the deaths of children are as 12.9 among the Jews to 24.1 among the Christians. This tenacity of life is maintained into later periods. At Frankfurt, among the Jews, 54 per cent. reached their fiftieth year; among the Christians 38 per cent. only. Of the Jews 27 per cent. reached the age of seventy, of the Christians 13 per cent. One-fourth of the Jews lived to be twenty-eight and a-quarter years old, while one-fourth of the Christians lived to be six years and eleven months old. Half the Jews at Frankfurt reached fifty-three years and one month, half the Christians succumbed at thirty-six. One-fourth of the Jewish population passed the age of seventy-one; one-fourth of the Christian population exceeded only fifty-nine years and ten months. The Jews marry less frequently, have fewer children, fewer still-born children, and fewer deaths among those they rear, than the rest of the communities, but the vitality among those who live is such that the Jewish population increases in effective strength over others. Dr. Glatter, from the mortality of one thousand persons, gives an average duration of life to Germans of 28.50 years, to Hungarians 23.11, to Croats 22.10, to Jews 30.20 years. Legoyt gave statistics of

suicide in 100,000,000 inhabitants of Prussia, Bavaria, Württemberg, Austria, Hungary, and Transylvania, as follows: Protestants, 616·3; Catholics, 373·9; Jews, 291·4. But in Bavaria the suicides were 135·4 Protestants, 49·1 Catholics, 105·9 Jews. From tables supplied to him by Dr. Asher, Dr. Richardson was able to offer an approximative estimate for London. The deaths mentioned in these tables amounted to 2,563. The interesting fact resulted from them that the mortality among the Jews was highest at the extreme or latest period of life, and lightest at its beginning and meridian. Thus, in the first five years the relation was as 45 for the whole population to 44 for the Jewish; in the meridian of life (between thirty-five and forty-five) it was 3 to 5, and at the extreme of life (from eighty-five years upwards) it was 0·8 to 2, or nearly 1 to 3. The facts were remarkable in the light of the severities amid which the ancestors of living Jews maintained such a tenacity of vital power, locked up in close quarters, debarred from social privileges. Three reasons had been assigned for this high vitality—(1) an innate excess of vital resistance, (2) the observance of the rules of health laid down in the Pentateuch, (3) that the Jews have followed, either under the influence of necessity or from natural prompting, a better life in all that relates to the maintenance of a healthy physical existence. The results were due to all three causes. There was no physiological or anatomical superiority of the Jews over other races. In some respects they were inferior to Saxons and Celts; but they had less hereditary tendency to diseases such as scrofula, consumption, rheumatism. Coming to the second cause, the influence of the Mosaic sanitary code could scarcely be overrated, and its provisions formed a marvellous collection of sanitary rules. The Second Commandment specified the times (the third and fourth generation) required to wipe out the effect of physical degradation. The third, sixth, seventh, eighth, ninth, and tenth, all had reference to the rule of the passions. The fifth takes special care of the aged and infirm, and the fourth, which enjoins a special day of rest, and was seven times repeated, is so important a provision for health that a nation which followed it strictly might, on the purest physiological grounds, expect to realise an extra seventh term of existence. The perfect cleansing of the house, that process which now, as the Passover approached, was about to commence, was one of those great sanitary rules which, carried out by the whole community, would do more to cut off the spread of disease than any sanitary law which a modern Parliament could impose. The cleansing of vessels, the separation of cloths for such cleansing and such ablutions, the baths that are religiously enjoined, the isolation of infectious sick, the purification or destruction of infected houses, were all parts of the scheme. A great advantage was gained by abstaining from the flesh of animals which feed on garbage, and from diseased or decomposed food. In the third category came causes of longevity, which might be called social and moral, as comparative immunity from hard physical labour, the value which persecution had taught the Jews to set upon the family life, their diligent care (it had been called 'extravagant' care) of the young and old. Dr. Richardson also dwelt upon the valuable habit of thought for the morrow which had caused Jews to be accused of parsimony; and on their comparative freedom from intemperance. In conclusion Dr. Richardson exhorted his hearers to continue to obey those wise laws which led to the fulfilment of the prophecy of their own grandest poet, 'When the voice of weeping shall be no more heard nor the noise of crying, when there shall be more an infant of days nor an old man that hath not fulfilled his days; when the child shall die an hundred years old.' Sir Barrow Ellis, who presided on the occasion, confirmed from his long experience in the East the conclusions of Dr. Richardson upon the sanitary excellence of the Mosaic code.

REPORT OF THE CAMBRIDGE STUDIES' SYNDICATE.—The Syndicate appointed in May last year to consider the requirements of the University of Cambridge in different

departments of study have just issued their report. The Board is of opinion that lectures are required in the University on the following subjects among others: Elementary Biology; Systematic Botany:—(1) Elementary and (2) Advanced; Vegetable Morphology and Physiology:—(1) Elementary and (2) Advanced; Zoology:—General. Special: (1) Vertebrates; (2) Molluscs; (3) Insects; (4) other Invertebrates; Comparative Anatomy:—(1) Elementary and (2) Advanced; Embryology, Osteology; Physiology:—(1) Elementary and (2) Advanced; Physiology of the Senses; Physiology of Nutrition; Human Anatomy, including Animal Mechanics, etc.:—(1) Elementary and (2) Advanced; Ethnology. The course on elementary biology might be given by a demonstrator acting under a Professor of Physiology or of Comparative Anatomy. The elementary and advanced courses on systematic botany might be given by one teacher. The elementary and advanced courses on vegetable morphology and physiology might be given by one teacher. A third botanical teacher (for cryptogamic botany) will probably be required at a future time. The general course of zoology requires one teacher. The teaching which is at present required in the special departments of zoology might be given by curators of the Museum, who should also act as demonstrators; but special teachers of each of the four departments will be required eventually. The elementary and advanced courses on comparative anatomy might be undertaken by one teacher. The courses on embryology and osteology might be given by demonstrators; but each subject is important enough to occupy the whole time of a teacher if a suitable one is available. The elementary and advanced courses on physiology require one teacher. The remarks made on embryology and osteology apply also to the subjects of the physiology of the senses and the physiology of nutrition. Elementary and advanced courses on human anatomy might be undertaken by one teacher. The subject of ethnology would be best undertaken by a separate teacher if circumstances should admit. It is desirable that the University should have the opportunity of inviting men who have devoted themselves successfully to the prosecution of special departments of science to give lectures in the University; but the delivery of such lectures must depend rather upon the men being forthcoming than upon any *à priori* consideration of what subjects require elucidation. In Zoology, work-rooms are required for the professor, superintendent of the museum, curators, and demonstrators. In Comparative Anatomy a laboratory is required, including dissecting-rooms, rooms for microscopical work, etc. In Physiology, a laboratory is required, including chemical laboratories, rooms for microscopical work, etc. In Human Anatomy, dissecting-rooms are required, and rooms for microscopical work. Each department will require rooms for research, microscopes and other apparatus, as well as diagrams. In reference to more immediate wants of the biological departments, it may be stated that the present teaching staff consists of the Professors of Anatomy, Botany, and Zoology and Comparative Anatomy, each of whom, except the Professor of Botany, has a demonstrator. The chief teaching of physiology is at present conducted by the Trinity Prælector in Physiology. The additions to the teaching staff most urgently required are (1) a professor or teacher of comparative anatomy; (2) a more definitely recognised teacher of vegetable morphology and physiology; (3) two curators in zoology (molluscs and insects), to act also as demonstrators; (4) two demonstrators of physiology; (5) an additional demonstrator of comparative anatomy; (6) an assistant-curator of the herbarium, to act also as demonstrator of systematic botany; the professor of botany being *ex officio* curator of the herbarium. The appliances most urgently needed are laboratories for chemistry, comparative anatomy, physiology, and vegetable morphology, and work-rooms for the zoological museums. It is desirable that all the teachers in each of the several departments should be grouped in one organisation. The Board considers that

while there is room in the University both for professors and lecturers, appointed directly by the University, and for inter-collegiate lecturers, it is undesirable to have lecturers in natural sciences teaching members of their own colleges exclusively. It appears that physiology, comparative anatomy (as distinguished from zoology), and vegetable morphology and physiology (as distinguished from systematic botany), are so important and so distinct that they should be entrusted to independent professors, but till this can be done the subjects may be undertaken by other lecturers. It seems desirable that the selection of University professors should be entrusted to a body of about seven electors, of whom a majority should be residents in the University; that such electors should be appointed either for life, for a term of years, or by virtue of holding some official post, and that those who are not *ex officio* electors should be nominated by the Board of Studies with which the professorship is connected, and be elected by the Senate. Further, that the selection of other teachers appointed by the University, but not directly subordinate to the professors, should be made by similar bodies of electors in the University, or by the several Boards of Studies, and that demonstrators should be appointed as at present. It seems desirable that in the case of the recognition of individual intercollegiate lecturers by the University, the appointment of such lecturer should receive the confirmation of the several Boards of Studies.

SLEEP AND DREAMING.—In the first of two lectures on this subject given by Dr. Ferrièr, at the London Institution, he commenced by stating the principle that no living thing was capable of continuous or unintermittent activity, it being an inflexible law of nature that a period of work must be succeeded by a quiescent state, during which the organism might repair the loss entailed in its tissues by previous exertion. A muscle was capable of a certain amount of activity, but its energy, after a little while, became exhausted, and the muscle itself powerless and flaccid. That which was true of one muscle was true of the whole body and of its individual organs. Even the heart, the action of which appeared to be incessant, conformed to this universal rule, though its motions were not intermittent, but rhythmical. In fact, there was a distinct period of rest between each pulsation. It was, however, in the case of the brain more than in that of any other organ that we had this principle forced upon our notice. Every act of thought or volition entailed a certain loss or consumption of brain-substance, and the period during which the brain rested for the repair of this loss formed the period of our existence which we termed sleep. Sleep was, however, something more than a time of rest for the brain, as it was the time during which the whole body recouped itself for such waste as had not been made good during the day. A general sketch of the nutritive process in the human body was here appropriately introduced, after which the lecturer enlarged on the well-known physiological fact that a local increase of activity in the system is always accompanied by a corresponding local increase in the circulation. A large proportion—about one-fifth—of the whole of the blood leaving the heart normally flowed directly to the brain. An increase of activity in this organ, as deep thought, increased this flow—a fact proved by direct observation. Now, the approach of sleep was accompanied by a gradual diminution of brain-circulation, and also by a sensible collapse in the substance of the brain. Consequently, during sleep more than the normal quantity of blood was distributed over the remainder of the body, notably over the surface and extremities, which accounted for the extreme liability to take cold during this state; for the warm blood flowing beneath the surface of the skin was very apt to lose a certain portion of its heat by radiation into a cold atmosphere. Any cause tending to promote circulation in the brain, such as worry or anxiety, tended to prevent sleep; and, inversely, any cause tending to diminish the circulation in the brain induced sleep; too sudden a diminution, or entire cessation, producing syncope or death. Warmth

of atmosphere, darkness, and monotony of sound, were all influences inducing sleep by absence of excitation to the brain. The duration of sleep required by nature varied in different individuals, depending inversely upon the rapidity with which the repair of wasted tissues went on in differently constituted organisms. The daily or nightly sleep required by the human subject was probably about eight hours in the case of the average adult. Young children, whose tissues were in a state of rapid growth, slept during the greater part of the twenty-four hours, while old people, on the other hand, whose tissues were in a state of gradual decay, required very little sleep indeed. Dr. Ferrièr concluded the first lecture with some observations on the nature and physiological action of narcotics. In the second lecture, on 'Dreams and Dreaming,' the lecturer said, the brain, though an unity, was a complex unity, and therefore while one portion of it rested others could go on actively. Hence the reflex actions of the brain took place as well, or even better, during sleep than in the waking hours. All ideas were the results of sensory impressions, of which the brain might be termed the organic register, and when we recalled ideas we, in reality, re-excited exactly the same portions of the brain as were originally concerned in taking the impressions. In a converse manner strong ideas might and did occasionally cause absolute sensory impressions—optical illusions, for example, such as occurred to 'spiritualists' and persons labouring under many forms of insanity. Not only might ideal phantasms be thus produced, but pathological changes and even disease might be engendered by a powerful imagination. Dreams were the revival during sleep of impressions registered during waking hours. None of their elements were or could be new; the arrangement alone of the elements might be novel. In short we had in dreams a series of permutations and combinations of facts that had come within our own past or possible experience or knowledge, and therefore to dream of future events was simply impossible. Incoherent dreaming was caused by a kaleidoscopic grouping of impressions. The causes that produced the re-excitation of mental impressions during sleep were various, but might usually be traced either to some disturbing physical or physiological influences on the body, or to the retention of some recent train of waking thought. Thus, indigestion produced the familiar phenomenon of nightmare by transmission to the brain of the sense of oppression on the chest; and concentration of thought on one subject during great part of a day, brought about a morbid condition of the brain-cells, which caused the imagination during sleep to revert to the strongly pre-occupying subject. It was due to this that we occasionally heard of poets, mathematicians, etc., completing during sleep some line, or stanza, or problem on which they had previously unsuccessfully laboured. There could be little doubt that all impressions once made on the brain were permanently retained; it was merely the revival of them that constituted the difficulties of a bad memory. Some persons possessed in an extraordinary degree the power of retaining and combining impressions, the lecturer quoting as an example of this an anecdote from the recent review in the *Daily News* of Mr. Trevelyan's *Life and Letters of Lord Macaulay*. Somnambulism was described as 'active dreaming,' and 'talking in one's sleep' as a mild form of somnambulism. It was an interesting fact that dreams for the most part occurred while the brain was being resuscitated—being frequently caused by the very noise that awakened the dreamer. This led on to a short dissertation on the duration of dreams, which were, as a rule, almost incredibly short. This was explained by the fact that it required but a very brief time to re-excite impressions that were ready formed on the brain, although their formation might have occupied many years. Other topics of interest in connection with the subject were introduced, interspersed with interesting anecdotes, the lecturer on concluding being warmly applauded by a crowded audience.

The London Medical Record.

Authors of Papers, Theses, &c., will assist in the preparation of summaries by our reporters, by forwarding separate copies of their works.

FÜRBRINGER AND OTHERS ON THE ANTI-PYRETIC ACTION OF SALICYLIC ACID AND SALICYLATE OF SODA AND THEIR USE IN FEBRILE DISEASES.

During the last and the present years, a number of articles have appeared in the German medical periodicals on the action of salicylic acid as an antipyretic in febrile diseases. By some practitioners also, salicylate of soda has been used.

In an article in no. 18 of the *Centralblatt für die Medicin. Wissenschaften* for 1875, Dr. Paul Fürbringer, of Heidelberg, describes the results of experiments on the antipyretic action of salicylic acid, given internally and by subcutaneous injection. A first series of experiments on the effect of the acid during health was made on ten rabbits and six men; the dose being $1\frac{1}{2}$ grains in the former, and 4 to 8 grains in the latter. No effect was produced on the normal variations of temperature, which had been carefully noted some days before the commencement of the experiment.

A second series of observations had reference to the influence of salicylic acid on septic fever artificially produced in rabbits. In nine cases, there was a distinct lowering of temperature after the administration of salicylic acid. The dose varied from .15 grain to 3 grains. In three cases it was given in starch enema (1 part in 50); in two, it was introduced into the stomach by means of an elastic catheter (1 in 30 of water or decoction of starch); in three it was given by subcutaneous injection (1 in 2 of alcohol or 5 of warm water); and in one, both by subcutaneous injection and by enema. There was no remarkable difference in the effect—a rather rapid fall of temperature, generally from two to six hours after the administration of the dose.

A third series of observations was made on the action of salicylic acid on fever induced by the inunction of croton-oil. No distinct results were obtained.

A fourth series of experiments was made on the effect of salicylic acid on pyæmic fever produced by the subcutaneous injection of healthy pus, diluted with a 0.5 per cent. solution of chloride of sodium. In two observations that were completed, the results were similar to those in the second series.

C. E. Buss, of Basle, contributes an article on the use of salicylic acid as an antipyretic to the *Deutsches Archiv für Klinische Medicin* (Band xv., 5 and 6 Heft). The following are some of the conclusions in which he sums up his results.

1. In its action as an antipyretic in the treatment of wounds, as well as in its action on the human organism, salicylic acid shows a very remarkable agreement with quinine.

2. No other unpleasant consequences are found to

attend the use of salicylic acid than those which follow the administration of quinine.

3. No irritating influence of any importance is exercised on the mucous membrane of the mouth, bladder, and rectum; in the stomach also it is not to be expected. Caustic action, such as is produced by carbolic acid, is entirely absent; and salicylic acid can be administered for a long time without producing gastric catarrh.

4. In healthy individuals, large doses (45 to 60 grains) first produce a stage of congestion, with a feeling of warmth and perspiration over the whole skin, and impaired hearing and vision.

5. When this has ceased, after lasting about a quarter of an hour, it is followed, if the dose be sufficient, in about two hours, by tinnitus aurium, which also disappears in a few hours; the hearing is generally unaffected with this.

6. No influence on the temperature and frequency of the pulse can be observed in healthy persons.

7. Febrile patients, to whom larger doses have to be given, show the above-mentioned symptoms; and, if the dose be increased in a high degree, the difficulty of hearing may last for more than one day.

8. There is a total absence of any other influence, especially narcotic, on central organs, even with large doses.

9. The most remarkable effects of a large dose are reduction of the temperature and of the frequency of the pulse.

10. It may be said that twice as much of salicylic acid as of quinine is required to produce this lowering of temperature; the usual dose of salicylic acid required is from one to two drachms. These doses do not produce collapse or other unpleasant symptoms; vomiting also does not appear to be more frequently produced by a full dose of salicylic acid than by quinine.

11. With the above-mentioned doses, the antipyretic effect of salicylic acid is at least as certain as that of quinine.

12. The greatest antipyretic effect is obtained as a result of cumulative action when two large doses are given in twenty-four hours, one in the morning and the other in the evening.

13. The resistance of the fever varies in different cases and in the individual stages.

14. Salicylic acid can be easily detected in the urine a short time after it has been taken, but mostly after the end of thirty-six hours. Iron salts (especially diluted liquor ferriperchloridi) produce a dark violet colour.

15. Salicylic acid can also, after its administration, be detected in the sweat, saliva, and sputa, by the same reagent.

16. The quantity required being taken into consideration, salicylic acid is five times as cheap as quinine.

17. The treatment by salicylic acid and by cold water may be combined with the best results.

Buss generally gives salicylic acid in doses of 30 grains with 15 grains of sugar; the latter assists the suspension of the acid in water and renders the taste more pleasant. The powder of salicylic acid and sugar may be given in a wafer; or, if the patient object to this, it may be suspended in a little water, the patient, after drinking it, washing his mouth with some pure water, peppermint tea, or peppermint water. The dry powder sticks obstinately to the mucous membrane of the tongue and fauces, and

gives rise to an unpleasant taste, which excites vomiting by reflex action.

At a meeting of the Berlin Medical Society on June 2, 1875, Dr. Senator said that he had given salicylic acid in a number of cases, especially in the hectic of phthisical patients. In about fifty observations, salicylic acid distinctly reduced the temperature in ten, but not so surely as quinine; which, moreover, more frequently failed, especially in hectic fever. In some cases, the result of salicylic acid in reducing the temperature was very remarkable; in others it seemed to have little or no effect. Perhaps this was due to the dose being too small, the medicine being at first given in powder or in emulsion. Of ten cases of quotidian and tertian intermittent fever, four were cured after one or two doses; in the other five cases, the results were not known, as the patients did not return to the hospital. The dose used for adults was eleven to eighteen grains. At first it was given in powder with sugar; afterwards in solution in water and glycerine, warmed before taking each dose. No troublesome results were observed to follow the use of the salicylic acid. It was readily detected in the urine by testing with perchloride of iron.

Staff-Surgeon Dr. Jahn, of Stargard (*Der Feldarzt*, no. 1, 1876), thus speaks of the physiological action of salicylic acid.—1. In daily doses of from 4 to 8 grammes (1 and 2 drachms), salicylic acid is an excellent antipyretic, surpassing the cold bath always, and quinine in certain circumstances. 2. After producing slight and very transient phenomena of noise in the ears and slight congestion, its administration is followed, in a time varying from twenty minutes to two hours, by profuse perspiration, which lasts from four to eight hours. 3. With the commencement of the sweating, a rapid fall of temperature sets in, amounting in some cases to more than 3.6° Fahr. in two hours, and in others from 1.8° to 3.6° and more Fahr. in from three to five hours. This action is most constant and marked, when 6 grammes (1½ drachms) are given in the evening at the commencement of cases of remittent typhus; it also appears constantly after an evening dose, when there are no remissions, and continues; the action is increased by a large evening dose following a small morning dose. In most cases, however, the evening exacerbation can be prevented by a large morning dose, and if this be followed by a smaller dose in the afternoon, a considerable evening remission may be produced, which will continue until the next day. The action of the remedy lasts from four to twenty hours. 4. After the outbreak of perspiration, and with the first fall of temperature, the previously restless and agitated patients become tranquil; they sleep with deep, often stertorous, inspiration, from two to eight hours. This sleep is not the result of narcotic action, but of the exhaustion which necessarily attends a high degree of febrile action. 5. The pulse is reduced by ten, sometimes by twenty or twenty-four beats; the respirations are reduced by four to twelve. 6. Irritation of the mucous membrane of the digestive canal was observed after the administration of the drug profusely suspended in water; if it were not properly mixed, so that lumps stuck in the throat, any soreness of the throat that was present appeared to be somewhat increased. In such circumstances, the irritation of the throat by the foreign body now and then produced vomiting, which, however, did not interfere with the administration of another dose

some hours afterwards. There was no pain or burning in the stomach; nor, in two necropsies which were made, were there any signs of erosion of the œsophagus, stomach, or duodenum. 7. Salicylic acid appears to exercise a very favourable influence on the mucous membrane and muscular structure of the intestine, as in six cases of severe typhus (enteric) there was no diarrhœa, nor any great amount of meteorism. Most of the patients had but one loose stool daily, which at the end of a week became partially solid. 8. The cost of salicylic acid is much less than that of quinine; the daily dose of the latter rating, on an average, 1½ mark (1s. 6d.) while the former costs 0.4 mark.

Ad. Nathan (*Dissertation*, Kiel, 1875; and *Deutsche Zeitschrift für prakt. Medicin*, no. 2, 1876) has used salicylate of soda in twelve cases, viz., nine of enteric fever, one of pulmonary phthisis, one of osteo-myelitis of both tibiæ, attended with severe traumatic diphtheritis, lymphangitis, lymphadenitis, and diphtheritic affection of the throat, and in a case where partial subperiosteal resection of the vomer was undertaken. The results which he obtained were as follows. In all cases, without exception, the temperature, which was often excessively high, was reduced by salicylate of soda. The eminently antipyretic action of this remedy was only produced by large doses, which were repeated at short intervals. The author gave eight grammes (two drachms) to a not very strong woman, and would give even a larger dose if circumstances demanded it. If a sufficient remission of the symptoms were not produced in two hours, a similar or even larger dose was given, and repeated until an effect was produced. When the temperature had become normal or subnormal, smaller doses generally sufficed to prevent it from returning to its former height. As soon as a temperature of 39° Cent. (102.2° Fahr.) was reached, or even sooner, Nathan gave from one to two drachms of salicylate of soda to adults, and correspondingly smaller doses to children, and thus in most cases obtained a reduction to the normal. Sometimes, however, the dose had to be repeated in two hours. As with quinine, in cases of high temperature, a better result was produced by one large dose than by a number of small ones given at intervals.

The antipyretic action of the salicylate of soda was most strikingly shown in one of the cases of enteric fever. When the patient was first seen at 3 P.M. the temperature was above 106° Fahr. At 7 P.M. the first dose of 1½ drachm was given, and repeated at 2 A.M. At 8 A.M. the temperature had fallen to 101.2° Fahr.; it then increased, although two drachms were given at 9 o'clock, until at 2 P.M. it reached 106.8° Fahr. A dose of two drachms was then given, and one drachm two hours afterwards. The result was a fall of temperature to 97.16° until 8 A.M.; and it did not rise above the normal during the whole of the following day. In this case, the remissions were of long duration. That the reduction of temperature depended on the salicylic acid was proved by the fact that, when the medicine was omitted for one day, it rose to 106.16°. After this, several large doses were quickly given, six and a half drachms of salicylic acid being taken in twelve hours.

As with many other remedies, the susceptibility to the action of salicylic acid varies in different individuals and even in the same person. In children under one year, Dr. Nathan advises to begin with

half a gramme ($7\frac{1}{2}$ grains); but in the case of a child six months old, where this quantity produced no result, he gave a whole gramme an hour afterwards. For adults, the minimum dose appears to be generally a drachm. The salicylate of soda was always given in the form of aqueous solution (one part in four or five of diluted water). Although the taste of this is not remarkably pleasant, it is readily enough taken even by children.

In a case attended with hectic fever, the salicylate of soda produced perspiration, after which the patient felt more comfortable than before; and this feeling of comfort was marked in all the cases where the temperature fell to or below the normal after the administration of salicylate of soda. In cases of high fever, the reduction of temperature was followed by refreshing sleep, the patients feeling apparently well on awaking.

Very soon after the administration of the medicine, even before there was a perceptible fall of temperature, a remarkable retardation of the movements of the heart was produced. With the fall of the pulse, the arteries became more full and tense. In one case, the pulse, from being 136, small and weak, fell in the morning to 88, and in the evening to 60, becoming strong and full. From this action of salicylate of soda on the heart may, perhaps, be derived an indication for its use in cases of insufficiency and narrowing of the mitral valve. As regards respiration, the respirations were deepened in the cases observed, but there was little or no increase in frequency. After eight or twelve hours, the breathing became perfectly quiet and normal.

Dryness of the tongue was observed in some of the cases in which salicylate of soda was given; but this is observed in enteric fever. In four cases there was vomiting, but this ceased when the patients lay perfectly quiet and the medicine was given to them in the recumbent position. Nearly all the patients complained of noises in the ears and slight deafness; but these symptoms soon disappeared. In some cases they were entirely absent. Pain in the stomach, which has been observed after large doses of salicylic acid, did not occur. In four necropsies the mucous membrane of the stomach was found unaffected. In the cases of enteric fever treated with salicylate of soda there was no more diarrhoea; when any was present, it generally soon disappeared, as did also the concomitant bronchial catarrh.

As regards the intellect, Nathan says that it was generally clearer than before. In one case, a fresh increase of temperature was attended with moderate delirium; while in three other cases of enteric fever in the Kiel hospital violent delirium appeared in a few days.

The author regards the salicylate of soda as preferable to quinine, digitalis, and veratria; it can be given in rapidly repeated doses without danger of cumulative action, and does not produce dangerous after-consequences.

Köhler of Halle describes in the *Centralblatt für die Medicinischen Wissenschaften*, nos. 10 and 11, 1876, the results of an investigation of the physiological action of salicylic acid and salicylate of soda.

Injection of a solution of pure salicylic acid (1 in 300) into the jugular vein of a rabbit produced a fall of the blood-pressure, the curve being closely similar to that following the injection of large quantities of solution of chloral. This reduction of pressure occurred also after division of the vagi and of the spinal cord. Injection of solution of salicylic

acid (1 in 300) into the stomach through a flexible catheter produced no result in rabbits and small dogs, neither lowering the blood-pressure nor rendering the pulse slower. Injection into the jugular vein of solution of salicylate of soda (in proportions varying from 1 in 90 and 1 in 60 according to the size of the animal) produced slowness of the pulse and fall of the blood-pressure. When salicylate of soda was introduced into the stomach, marked results were obtained.

Respiration was retarded both by salicylic acid and by salicylate of soda; when the latter was injected into a vein, the first effect was acceleration of the breathing. The retardation of the respiration was more marked after section of the vagi.

The administration of salicylic acid or salicylate of soda produced a marked reduction of temperature.

L. Riess (*Berliner Klinische Wochenschrift*, nos. 50 and 51, 1875) gives the results of more than 400 observations on the internal use of salicylic acid. He used the pure acid for a short time, but in most of the cases gave salicylate of soda; five grammes of salicylic acid being given in a solution of phosphate or carbonate of soda. It was observed that the temperature was reduced by this dose, even when there was no pyrexia. In twenty-three cases there was an average reduction of 0.9° Cent. (1.62° Fahr.) in from four to six hours; the pulse remained unchanged as to number.

In febrile cases, the fall of temperature amounted to 2° , 3° , and even 5° or 6° Cent., often in one or two hours. The action was slight and of short duration in proportion to the intensity of the fever; and it was especially weak towards the termination of fatal cases, so that the degree of action produced by the remedy was an element in prognosis. In favourable cases, the normal temperature was reached in twenty-four hours. The result was especially well marked in enteric fever, of which 260 cases (209 of them being recent) were treated. The temperature was taken every two hours; and whenever it exceeded 102° Fahr., the above-mentioned dose was given. The first dose was sometimes insufficient. In cases of moderate severity, one dose every twenty-four hours was generally sufficient, and, from the middle or end of the second week, it was enough to give it every thirty-six or forty-eight hours. After the third week, the temperature rarely rose above 100.4° Fahr., so that at most eight or ten doses were sufficient to reduce the temperature to normal. The frequency of the pulse remained unaltered in a remarkable manner; it often remained at 130° or more when the temperature had fallen to 98.6° or 96.8° or even lower. On the other hand, the pulse often became stronger, and exhibited dicrotism less frequently than generally occurs in enteric fever.

The administration of the medicine was rarely followed by unpleasant consequences; these consisted in congestion of the head, noises in the ears, and muscæ volitantes. In some cases there was mental excitement. Vomiting was very rare, and symptoms of collapse were observed in three cases (two of phthisis and one of pneumonia). Perspiration was frequently produced, sometimes very profuse.

In the more severe cases and those complicated with cerebral symptoms, baths were used along with the salicylic acid; and under these circumstances the action of the baths appeared to be greater and more lasting than when they were used alone.

Although the enteric symptoms generally continued in spite of the reduction of temperature, the duration of the disease was generally shortened. In 166 cases which were admitted early and ran a favourable course, the average duration of the febrile stage was 13.1 days. The character of the epidemic was very severe, and the mortality great. Of the 260 cases, 63, or 24.2 per cent., died.

The elimination of urea appeared to be increased, but Riess does not speak decidedly on the point.

The antifebrile action of salicylic acid was also proved in other acute diseases: in thirty-five cases (mostly severe) of croupous pneumonia, of which eleven died; in seven cases of erysipelas; and in fifteen cases of acute articular rheumatism. In the latter, the remedy appeared to have more than a mere symptomatic action. Not only was there a reduction of temperature, attended with profuse perspiration, but the pains were relieved; and of the fifteen cases, four derived lasting benefit from one dose, and three from two doses of the medicine.

Salicylic acid was given with good effect in thirty-two cases of phthisis. The effect was more certain when it was given during the natural fall of temperature.

In intermittent fever, the action of salicylic acid was very uncertain. Of nine cases, two were cured at once, and two after repeated doses; in the other five cases, quinine was necessary to complete a cure.

In the necropsies which were made, there were no signs of the lesions ascribed to salicylic acid, neither ulcerations nor erosions of the intestinal mucous membrane.

Goldammer contributes a paper on the internal use of salicylic acid to the *Berliner Klinische Wochenschrift*, no. 4, 1876. At first he used pure salicylic acid, but found, at the *post mortem* examination of a case of miliary tuberculosis, in which three drachms had been given, half-a-dozen ulcers as large as peas on the mucous membrane of the stomach. He afterwards gave it with soda in the form and quantity recommended by Riess. In the first two weeks of typhus (enteric), evening doses were most effective; in the stage of remission, when smaller doses were generally given, a full dose in the morning was useful in arresting the evening exacerbation. Goldammer agrees with Riess as to the effects on the pulse and perspiration.

Symptoms of collapse were specially noticed as after-results. In a slight form, they often occurred; in a case of miliary tuberculosis, in which the temperature fell to normal after the administration of seventy-five grains of the acid, the collapse was so severe that the patient recovered from it with difficulty; and in a severe case of typhus, in the fifth week, the patient died in collapse after a similar dose. Great caution is required in using the medicine in cases of weak heart. Of fifty-six cases of enteric fever treated with salicylic acid, seven died (three from pneumonia of the upper lobes). Goldammer did not find that the duration of the disease was cut short by the remedy.

Zimmermann (*Archiv für Exper. Pathol.*, 1875, p. 248) found in some experiments made in the Pharmacological Institution at Greifswald, on rabbits in whom fever was produced by the injection of putrid fluids, that salicylic acid given by the mouth or by subcutaneous injection had little or no antipyretic effect.

A. Bertholet, of Dresden (*Archiv der Heilkunde*, 2

and 3 Heft, 1876) has given salicylic acid with success in one case of pulmonary gangrene, five cases of catarrhal stomatitis, eight cases of aphthæ, and three cases of obstinate dysentery, occurring in children in the same family. In the last-named disease, the medicine was given in enema (2 parts in 300 of water, with wine spirit), and succeeded in all; the disease in one of the cases (a child aged six) having obstinately resisted other treatment.

Dr. F. Weber, of St. Petersburg, contributes to the *Allgemeine Medicinische Central-Zeitung*, for March 25 and 29, an article on the use of salicylic acid in febrile diseases.

A woman, aged twenty-five, had perimetritis after labour, which was for some days treated with quinine and local remedies. The fever, however, remained high; the patient had ichorrhæmia with suppuration in the joints, and delirium; and each dose of the quinine was followed by vomiting. The quinine was omitted, and a drachm of salicylic acid was given daily in five-grain doses. Chloral-hydrate was also given to relieve the head-symptoms. In the course of five days, the temperature fell from 104° or 105° Fahr. to 99°; the pulse diminished; and the cerebral symptoms almost completely disappeared in four days. Dr. Weber also reports six other cases of puerperal disease, in which the use of quinine was attended with good effect. Their characters were as follows: Metroperitonitis with endometritis and septicæmia; putrid endometritis and parametritis (two cases); puerperal parametritis; putrid endometritis; and diphtheritic endometritis. He remarks that the salicylic acid had a remarkably favourable effect on the course of these cases; the temperature being rapidly reduced and the cerebral symptoms relieved. When the salicylic acid was given in combination with quinine, the remission of the fever was not so rapid and lasting as when it was given without quinine. The administration of the larger doses of salicylic acid was soon followed by abundant perspiration, especially during the decline of the fever. Along with the salicylic acid wine and brandy were given abundantly in all the cases; and, in spite of the large doses of salicylic acid (sixty to eighty grains daily), no toxic symptoms were observed. To prevent gastric disturbance, oily emulsions were given. Pain in the epigastrium and vomiting occurred principally when the salicylic acid was given in wafers; and troublesome irritation was produced when the acid came into contact with the mucous membrane of the pharynx or œsophagus. The best form of administering the acid was found to be a solution of equal parts of phosphate of soda and salicylic acid (about one drachm in five ounces), given with a little syrup.

Dr. Weber has given salicylic acid in nine cases of diphtheria occurring in women and children. The solution above described was used; and in one case quinine was given along with the salicylic acid for the first two days. Noises in the ears and deafness were complained of by the only two adults. The gastric symptoms were very moderate, and were obviated by oily emulsions; the patients' strength was supported by cognac and tokay. In nearly all the cases there was a reduction of fever, attended with profuse perspiration. Notwithstanding that the diphtheritic process had extended widely, its further spread was arrested under the treatment, and the deposit was rapidly destroyed. In nearly all the cases there was infiltration of the submaxillary and jugular lymphatic glands, which in two cases went

on to the formation of abscess. Dr. Weber remarks that recovery occurred more rapidly under this treatment than in cases treated by the ordinary remedies.

Three cases of scarlatinal diphtheria, occurring in a woman aged twenty-eight, and two children aged five and six, were treated successfully with the above-mentioned mixtures. In one case, recovery was impeded by infiltration and subsequent suppuration of the submaxillary lymphatic glands.

Five cases of idiopathic erysipelas—the disease in four affecting the head—were treated by Dr. Weber. The erysipelas was extensive, and in the head-cases was accompanied with delirium. Four of the patients were women, aged from thirty to forty; one was a girl, aged eighteen. All were treated with salicylic acid, quinine being given with it in one case only; wine and camphor were also used, and an ointment of zinc and camphor was applied locally. The duration of the illness was less in the cases in which quinine was not given. All the cases ended favourably. In one of the cases—a woman aged thirty-two—in which a drachm of salicylic acid was given on the first day, and two drachms (through the impatience of the attendants) on the second, there were sudden collapse, with a fall of temperature to 98.25° , blueness of the hands and feet, and diarrhoea. These symptoms were relieved by strong coffee with cognac, and the diarrhoea was arrested by decoction of arnica root and calumba.

Three cases of influenza—a child aged two and two women aged thirty and thirty-five—with a temperature of 104° , and attended with angina, ozena, catarrhal bronchitis, and gastro-intestinal catarrh, were treated with salicylic acid. In all the cases the relief of the fever on the third day was attended with profuse perspiration. Notwithstanding the gastro-intestinal catarrh, the medicine was well borne.

In two cases of chronic pneumonia—in a child and a woman—in which the temperature during the febrile exacerbations exceeded 104° Fahr., Dr. Weber gave salicylic acid; the temperature, indeed, fell, but the dyspnoea and restlessness appeared to be increased. In the child the temperature fell suddenly from nearly 105° Fahr. to 97.16° Fahr.

In a case of very extensive catarrhal pneumonia, with a temperature of nearly 105° Fahr., the fever disappeared in three days after the administration of salicylic acid was commenced.

Dr. Weber regards salicylic acid as a valuable addition to the *materia medica*, especially as it acts not only as a febrifuge but as an antiseptic. Toxic symptoms are produced only when it is given in too large and too rapidly successive doses; it should, therefore, be given in moderate quantities, and any mischievous results can be warded off by the use of alcoholic liquors. The only cures in which Dr. Weber observed toxic symptoms were two in which salicylate of soda was given.

Dr. Julius Steinitz, of Breslau, writing in the *Allgemeine Medicinische Central-Zeitung* for February 13, says that he has given salicylic acid in thirty-four cases of scarlatina with diphtheritis, and eleven cases of genuine diphtheria, occurring in children. It was administered every one or two hours in doses of $1\frac{1}{2}$ to 3 grains in sugared water. Most of the cases were severe, and accompanied with much fever. All the children bore the medicine well. In some there was a little vomiting, but this

ceased after a few doses had been given. From ten to fifteen doses were usually sufficient to arrest the fever, and at the same time the diphtheritic process was almost always arrested. A few doses given less frequently completed the cure. Two of the forty-five patients died of diphtheria; none of secondary affections. No injurious effects on the digestive canal were observed. The salicylic acid did not seem to have an influence on the sequelæ of diphtheria.

Dr. Butt, of St. Gall (*Centralblatt für die Medicin. Wissenschaften*, no. 18, 1875), states he has given salicylic acid as an antipyretic with the best effect in various cases of enteric fever, erysipelas, acute articular rheumatism, etc. The dose was 1 to 2 drachms, according to the intensity of the fever. He did not find it to be followed by any toxic symptoms.

C. Moeli (*Berliner Klinische Wochenschrift*, no. 38, 1875), states that he has found salicylate of soda to be a valuable antipyretic, both in infective and in inflammatory fevers. In the milder cases, a dose of four or five grammes was sufficient to reduce the temperature; in more severe cases, a similar dose was required after a time varying from four to sixteen hours. The action was more marked if the medicine were given when there was natural fall of temperature. The antipyretic effect generally lasted twenty-four hours; so that it was possible, by sufficient administration of the medicine, to keep down the temperature during the whole course of the disease. In about half the cases, the fall of temperature was attended with abundant perspiration. No subsequent evil consequences were observed. In a few cases there was transient vomiting, but no other gastric or intestinal disturbance. The administration by enemata was less effective than by the mouth. Subcutaneous injection produced a rapid effect, but the large quantity necessary to be used was unpleasant. In six healthy persons, to each of whom a drachm was given in concentrated solution, vomiting was produced in three; and the others were troubled with nausea, etc., but were unaffected as regarded the temperature, pulse, etc. The same occurred in three others, to whom similar doses were given *per anum*.

Dr. S. Wolffberg (*Deutsches Archiv für Klin. Medicin*, vol. xvi.) found from observations made in Dr. von Ziemssen's clinic, that, when in case of typhus (enteric) salicylic acid was given in powder in a single dose of a drachm, it reduced the temperature only in exceptional cases; in doses of one-and-a-half drachm it had only a temporary effect, and none when given in repeated doses of half a drachm during twenty-four hours. He hence concludes that it has a very slight and uncertain antipyretic action. In a patient to whom salicylic acid was given in wafers, hæmorrhagic pharyngitis set in; and at the necropsy of the enteric fever patients there were found to be erosions in the gastric mucous membrane, extending in one case into the duodenum. Peculiar appearances were found in the bodies of those phthisical patients to whom salicylic acid had been given by way of experiment.

Fischer (*Deutsche Zeitschrift für prakt. Medicin*, no. 13, 1875) describes the results of the administration of salicylic acid and salicylate of soda in twenty-three cases of typhus in the town hospital of Dresden. The medicine was given along with baths, when the temperature exceeded 103° Fahr. The treatment was always commenced in the evening; in two cases doses of one to three grammes were given in rapid

succession, and continued in the morning. The acid was given in the form of powder in wafers; no irritative action was observed either at the bedside or on the *post mortem* table; the first doses were nearly always followed by considerable perspiration, and frequently by noises in the ears and difficulty of hearing. Vomiting rarely occurred; in two cases collapse followed doses of four and six grammes (1 and $1\frac{1}{2}$ drachm). Fischer found salicylate of soda to be equally effective with salicylic acid. Intestinal hæmorrhage occurred in four cases, of which two were fatal; in one case, extensive hæmorrhage was found in the serous membrane of the intestine, in the mesentery, etc. In none of the cases were there any erosions of the gastric or intestinal mucous membrane, except the enteric ulcerations. He agrees with Moeli in preferring the salt to the acid. With regard to the action of salicylic acid in other febrile diseases, he regards it as of great use in croupous pneumonia. Of two cases of intermittent fever, one was cured after the administration in all of $3\frac{1}{2}$ drachms of salicylic acid.

A. Hiller (*Deutsches Archiv für Klinische Medizin*, vol. xvi.) describes the results of his observations on the treatment of intermittent fever with salicylic acid. In seven cases the administration of from twelve to twenty-eight grammes (three to seven drachms) was successful; the febrile paroxysm was usually cut short by a dose varying from forty-five to seventy-five grains. These cases, however, were first attacks, and mild; in five severe cases and in relapses, the medicine failed, although as much as 100 grammes (25 drachms) was given in some. After large doses there was indeed an interruption of the disease, but it returned in a few days, and was then successfully treated with quinine. Even in favourable cases the duration of treatment with salicylic acid is longer than with quinine. There are also certain difficulties in the administration of salicylic acid. It is readily enough taken in water, but its great insolubility requires the use of a large quantity of water during the day, leading to increased diuresis and the rapid elimination of the medicine. Hiller found better results when it was given in powder, or in alcoholic solution (salicylic acid 10 parts, spirit of wine 15, glycerine 120). The disagreeable taste, nausea, and frequent vomiting—especially after the alcoholic solution—and especially the danger of irritating the digestive mucous membrane, are objections to its use. In three cases in which Hiller gave salicylic acid in enema, the administration was followed by severe pain in the rectum and diarrhoea, blood being discharged in one case.

Pel has published in the *Deutsches Archiv für Klinische Medizin*, Band xvii. 1876, the results of observations made in Professor Rosenstein's clinic at Leyden, on the effect of salicylic acid in intermittent fever. It was given according to the following formula: salicylic acid, one drachm; phosphate of soda, two drachms; rectified spirits of wine and simple syrup, each seven and a-half drachms; distilled water, forty drachms; to be taken in two doses, with an interval of half an hour. In other cases, bicarbonate of soda was used, and the medicine was given according to Riess's formula: salicylic acid, bicarbonate of soda, each 1 drachm; water, $12\frac{1}{2}$ drachms; syrup of orange peel, $1\frac{1}{4}$ drachm. The smallest dose during the apyretic stage was one drachm, the largest four drachms. The patients complained of the large amount of

liquid which they had to swallow, and occasionally of a sensation of burning in the throat. No mischievous effects on the pharynx or stomach were observed. The smallest dose followed by complete recovery was two drachms.

Thirteen in-patients and ten out-patients, who said that they had ague, were treated. Of the latter, three reported themselves cured, three said that the medicine had no effect, and four did not return.

Of the thirteen cases in the hospital, nine were cases of quotidian ague, one of tertian, and three of quartan. Two quotidian and one tertian were cured by the salicylic acid; no effect was observed in three cases of quotidian and three of quartan; and in five cases of quotidian a temporary effect only was produced, quinine being necessary to complete the cure.

W. Wagner, in an article in the *Journal für prakt. Chemie*, vol. ii. 1875, speaks favourably of the use of salicylic acid as a corrective of the fermentative process in cases of cancer of the pylorus, chronic gastric catarrh, and diarrhoea. In diphtheria he recommends for children who cannot gargle, a solution of two to three grains of salicylic acid in water every two hours; for older children, a gargle of 1·5 parts of salicylic acid, 15 of spirit of wine, and 150 of distilled water. He treated fifteen cases of diphtheria in this way with very favourable results; none of the patients died.

Dr. R. Buch, of St. Goarshausen, states in the *Allgemeine Medicinische Central-Zeitung* for February 26, that he has for some time treated diphtheria with salicylic acid. He uses a mixture of 5·5 parts of salicylic acid in 150 parts of a solution containing 5 parts of phosphate of soda, and gives a tablespoonful, to be swallowed slowly, every hour. This is given to children of five years old and upwards; for younger children a smaller quantity is used. At the same time, he prescribes, for children who can use it, a gargle of salicylic acid. He says that he has not lost a single case, although in most of his patients the diphtheria was attended with a temperature even as high as 107·5° Fahr., delirium, and severe epistaxis. His first case was a boy aged thirteen, who had been ill three days when first seen, and who complained of violent pain in the neck. The temperature was 106·7° Fahr., and afterwards rose to 107·5°, the fauces becoming thickly covered with the characteristic deposit. The patient had also great difficulty in deglutition, frequent epistaxis, and delirium. He treated the patient according to Hanow's plan, with a mixture containing two parts of salicylic acid, 120 of water, and fifteen each of mucilage of gum arabic and red syrup, of which one small spoonful was given every hour, the afflicted parts being also dusted twice daily with pure salicylic acid. He afterwards employed his own plan in a number of children of three years old and upwards, which he regards as possessing the advantage of being easily carried out by the patient's parents and friends.

Dr. H. Schulz, of Ehringshausen, communicates to the *Allgemeine Medicinische Central-Zeitung* for February 16 a contribution on the use of salicylic acid in diphtheria. He says that he has given it in two cases of scarlatinal sore throat in children aged ten and twelve years, and in twelve cases of primary diphtheria in twelve children aged from one to eight years. In the two scarlatinal cases and in some of the others there were extensive deposits in the fauces and adjacent parts, extending to the glottis and

nares. These cases were treated twice or three times daily in the following manner. As much salicylic acid as possible was taken up on a moistened brush, which was then applied carefully to the affected parts. In some cases it was necessary to leave the carrying out of this treatment to the attendants, after they had been shown how to do it. At the same time salicylic acid was given internally in combination with mucilage and water. The result of the treatment in ten cases in which it was employed was, that in some the diphtheritic exudation was diminished on the first day, the general symptoms in all were improved, and in some cases it was necessary to continue the local application after the fifth day. At this time the mucous membrane of the fauces was either more of a red colour, or was coated in some parts with a very fine bluish-white layer, not due to diphtheria, but, as Dr. Letzerich has pointed out, to an effect of the action of the salicylic acid on the epithelium.

In one case (a girl, aged eight), the treatment failed to arrest the formation of diphtheritic membrane, which became very extensive and thick, so that it was necessary to remove it. The patient recovered.

In three cases, the diphtheria was confined to the larynx, the symptoms being those of obstruction of the part. Dr. Schultze gave salicylic acid in mixture; but in two instances the symptoms were so severe that he performed tracheotomy; both children died. The third child probably recovered; it resided in an elevated and isolated locality, and perhaps suffered only from laryngeal catarrh.

The result of the two cases of primary laryngeal diphtheria show how powerless we are in this affection even with salicylic acid.

LEWINSKI ON THE INFLUENCE OF THE RESPIRATORY MOVEMENTS ON THE LOUDNESS OF PERICARDIAL FRICTION-SOUNDS.*

Skoda (*Percussion und Auscultation*, 6th edition, p. 226) has observed that friction-sounds originating in the pericardium are often either increased or diminished by the respiratory movements. Traube (*Gesammelte Abhandlungen*, vol. ii. s. 463), commenting on this, remarks that pericardial murmurs, unlike endocardial ones, often exhibit the peculiarity of being strengthened by inspiration. The following case, in which the exocardial sounds were, on the contrary, increased by expiration, is therefore of some interest.

Albertina A., aged sixteen, had suffered from chorea for some time, at the age of thirteen, and after that from a variety of ailments which proceeded from heart-disease (a combination of mitral stenosis with insufficiency of the aortic valves). In November 1874 she had an attack of acute multi-articular rheumatism, complicated by pericarditis. She was taken into an infirmary, and after a few weeks the acute mischief subsided. Soon afterwards symptoms pointing to insufficiency of the cardiac muscles (diminished diuresis, palpitation, dyspnoea, etc.) showed themselves. These were relieved by the use of wine and digitalis, but she was unable to resume her former occupation. About the middle of March 1875 she suffered from fresh pain in the chest; and on March 27, Dr. Lewinski found her

complaining of great pain, which was localised in the neighbourhood of the apex-beat, where even moderate pressure gave her pain. The apex-beat was strongest in the fifth costal interspace, an inch and a half to the left of the nipple. There was a slight diffused tremor all over the cardiac region. At the apex-beat there was a strong systolic thrill. The cardiac dullness began at the lower edge of the first rib, was quite complete at the lower border of the second, and reached to the top of the sixth rib. Towards the left it passed two fingers' breadth beyond the left mammillary line; towards the right, about an equal distance beyond the right border of the sternum. Auscultation revealed at the apex a triple friction-sound—a very clear systolic one, and two somewhat weaker diastolic (diastolic and præstolic). Higher up, the sounds were somewhat softer, and here, during the systole, a slapping sound was audible. Over the third left rib, and in the second left intercostal space near the sternum, a loud systolic sound, as well as a weaker diastolic one—masked, to a great extent, by two loud rubbing sounds—could be heard. These frictional or rubbing sounds were peculiar, in being much more loudly heard during expiration than during inspiration. Their character, too, was more rasping during expiration. The cardiac sounds, on the contrary, were certainly not so loud during expiration, indeed rather less so. The rapidity of the heart's action, and the numerous sounds to be disentangled by the ear, rendered this point a difficult one to decide. There were no respiratory sounds to be heard over this region, even during deep inspiration. The dullness, too, was absolute on percussion. Pulse 116, small, and of medium tension. Hardly any fever was present. From March 30 to April 2 similar observations were made. On April 13 all friction-sounds had disappeared, and the patient sat up for some hours daily, which was probably imprudent, since the præcordial dullness, though diminished, was still excessive; and on April 17 Dr. Lewinski was called in and found her in a moribund state, with a pleuritic friction-sound, bronchial râles, and great dyspnoea. In spite of strong stimulants she died on April 18, 1875, at 5 A.M.

At the *post mortem* examination the anterior edges of the upper lobes of both lungs were found united to the pericardium by old and firm adhesions—particularly near the apex of the heart; yet a considerable portion of the pericardium was uncovered by lung (so that still more would be uncovered in the act of expiration).

The adhesions between the lateral and posterior portions of the pericardial sac and the lungs were not so firm, and were easily parted by the finger. The pleuræ were thickened in these adherent parts. The lungs were tolerably healthy. Both layers of the pericardium were changed into a firm connective tissue, and were united to each other by a recent deposit of fibrinous nature, arranged in a sort of coarse network. The cavities of the heart were considerably dilated; there was stenosis of the mitral valve, though not extreme; and the aortic valves were thickened and retracted. There were signs of two attacks of pericarditis, and two of pleurisy.

The chief interest of the case lies in the increased strength of the pericardial friction-sounds during expiration. Dr. Lewinski remembers that in the first attack of pericarditis in 1874 it was during inspiration that the friction-sounds were loudest. In the latter attack it cannot be said that the loudness

* *Berliner Klinische Wochenschrift*, no. 5. January 31, 1876.

of the inspiratory sounds masked the friction, since there were no breath-sounds heard over the dull region, and the section shows the reason. Dr. Lewinski thinks the influence of respiration on pericardial friction-sounds, in causing them to become stronger, is a point of diagnosis between them and endocardial murmurs, which are usually weakened by respiration. Reference is made to Friedreich (*Herzkrankheiten*, p. 82), and to Traube (*loc. cit.*), who says that, when the anterior edge of the left lung is adherent, endocardial murmurs become louder during inspiration, which he attributes to a more energetic contraction of the muscular fibres of the heart. Thus another means of diagnosis between exocardial and endocardial murmurs is afforded us.

[The translator thinks that a great deal depends upon the condition of the respiratory muscles and organs; and upon the tension of the air within the thorax. In the case reported the subject was young, with healthy lungs; and the tension was presumably greatest in expiration.—*Rep.*]

W. BATHURST WOODMAN.

ON A FREQUENT AND NOTEWORTHY COMPLICATION OF DIABETES MELLITUS. BY DR. RICHARD SCHMITZ OF NEUENAUH.*

When well-marked diabetes mellitus has existed for a long time, symptoms set in which are very often attributed to a congested state of the brain, but are, in reality, due to quite a contrary condition. Besides much shortness of breath, and loss of appetite, which often sets in suddenly, there are giddiness, somnolence, light-headedness, tendency to syncope, vomiting, sometimes convulsions, and transitory symptoms of paralysis. These symptoms are both excited and aggravated by exercise, whilst absolute rest in the horizontal position and stimulants either diminish or entirely remove them. These patients have a small soft pulse, which is sometimes very rapid, at other times remarkably slow, and sometimes intermittent. Respiration is generally quickened, occasionally quite normal. The impulse of the heart is always very weak, and the apex-beat is scarcely to be felt. The sounds of the heart, over that organ and in the great vessels, are weak, and by no means clear. The first sound of the heart is often scarcely to be heard at the apex, sometimes not to be heard at all. Such patients often die quite suddenly; but for the most part, after these symptoms have lasted for some time, they fall quite unexpectedly into a comatose condition, from which they never awake. It may easily be understood that in such cases we frequently, if not constantly, have to deal with considerable depression of the power of the heart, and that this is only the expression of a totally exhausted heart, the subject of fatty degeneration. In long-standing cases of diabetes mellitus such a condition of things is not only rather common, but easily explicable. If we consider the accidents to which a much weakened heart, which has undergone fatty degeneration, is exposed, we can easily understand why so many diabetics die suddenly. But it will be allowed at the same time, that such a condition deserves careful attention and study. Amongst 109 diabetics who came under Dr. Schmitz's own observation and treatment, he says that he could discover in 80 of them the objective symptoms noted above of an enfeebled heart. The subjective symptoms were entirely

absent in a few of these, but existed in greater or less degree in the great majority. Twelve of these 80 diabetics died in their own homes very suddenly. According to the medical men who attended them, death occurred in three of these twelve not only suddenly, but unexpectedly. In nine, however, there were previous symptoms of slow development of cardiac paralysis or enfeeblement. In all, subjective and objective symptoms of an enfeebled heart had existed previously. In eight of them it was quite clearly shown that corporeal exertion of different kinds had been made a short while before the sudden death. In two patients who had over-taxed the powers of their hearts by a very fatiguing journey, Dr. Schmitz observed a high degree of insufficiency of cardiac action. His urgent counsels to rest the overworked organ were unfortunately not attended to. In consequence of this neglect, the patients suddenly collapsed, and in spite of the strongest stimulants, died almost immediately. [There was, unfortunately, no *post mortem* examination in either case. In both cases, the urine passed a few days before death was free from sugar.] In seven other cases, bodily exercise increased these symptoms in a degree which threatened to be fatal. But absolute rest in a horizontal position, and the use of stimulants, caused the threatening symptoms to disappear. Two of the cases are very interesting, and are briefly subjoined.

CASE 1.—Herr M., previously quite healthy, and with no history of diabetes in his family, received in April 1872 an extremely painful wound in one foot. Although after some time this healed up, he stated that he had never been quite well since. He became thinner, and was soon tired; severe thirst and polyuria set in; and in August of that year the urine was found to be very rich in sugar. The patient was sent to Dr. Schmitz by Professor Rühle of Bonn, and came under treatment on June 25, 1873. He was twenty-four years old, and his face appeared sunken and apathetic. He seemed indifferent, and only answered questions when they were repeated several times. He had no vision with the left eye, and very imperfect sight with the right one (cataracts). He felt very weary, quite unfit for work, and was fatigued by only walking two or three steps. His breathing was very quick. He slept a great deal, and very soundly. He complained of great bewilderment in his head, and of giddiness; on account of this he could not think clearly: he sometimes lost consciousness. These symptoms increased whenever he made the least exertion, and diminished when he rested for some time. He had much thirst, but very little appetite; his digestion was very irregular, and there was often a tendency to diarrhoea. His skin was very dry and harsh. He had scarcely any fat or muscle. The mucous membranes were very anæmic; tongue quite dry, and furred; the mouth had a strong fetor; pulse 94, small, and intermittent; he weighed only 105 pounds. He had lost 30 pounds in weight in four months. There were no special physical signs of lung-disease. The cardiac impulse was strikingly weak, scarcely to be felt. The heart-sounds were very faint and feeble, especially the first sound. The liver and spleen were normal. The day-urine was pale yellow, faintly acid, sp. gr. 1030, percentage of sugar 4.8; no albumen. The night-urine was clear yellow, same sp. gr., same reaction; percentage of sugar 4.0. The amount in twenty-four hours was 3,740 c. c. m. = 131½ ounces. The treatment consisted in absolute rest in a horizontal position; rigorous antidiabetic

* *Berliner Klinische Wochenschrift*, Jan. 31, 1876, no. 5.

diet, stimulants, and nourishment alternately; as a drink 6 or 8 glasses of the Sprudel (Neuenahr) water; mild chalybeates, and ethereal tincture of castor. On July 7, the first sound of the heart could be heard plainly. Pulse 80, not intermittent. He was better in every way. The urine was of sp. gr. 1026 (by day) with 1 p.c. of sugar, sp. gr. 1020 (by night) with $\frac{1}{2}$ p.c. of sugar; daily total 2270 c.c.m. = 80 ounces. By July 11 he had gained $3\frac{1}{2}$ pounds in weight. July 27. Pulse 72. He felt well, and much stronger; urine = sp. gr. 1010; no sugar; phosphates increased; daily quantity = 1400 c.c.m. = 49 ozs. By August 12 his total gain in weight was nearly 10 pounds. His diabetes had vanished. Pulse 76, and strong. Professor Saemisch of Bonn operated successfully on the cataract of the left eye, and in October of the same year the patient was reported as quite well.

CASE 2.—Herr L., aged fifty-seven, came under treatment in August 4, 1874. He did not know whether his parents suffered from diabetes. He was much bent in walking, and his steps were slow and uncertain. His face had an anxious expression, and was rather flushed. The skin was dry and withered; the muscles and fat almost entirely deficient. Pulse 88, very weak, and almost imperceptible. Temperature not elevated. Tongue dry and coated. The mucous membranes were very anæmic. There was a strong *factor ex ore*. He complained much of weakness, and of shortness of breath. He had a great inclination to sleep, which was very heavy. He was often seized with severe vertigo. The head was very heavy and stupid. No appetite. Thirst tormenting. On examination the lungs were found healthy. The cardiac impulse was very weak, and the apex-beat scarcely felt. The first sound was scarcely heard. The liver and spleen were normal. He weighed 108 pounds; he had lost much flesh the last year or two. The day and night urine had a sp. gr. of 1044, and contained 8 per cent. of sugar, but no albumen. Quantity in twenty-four hours = 5860 c.c.m. = 206 oz. The treatment was absolute rest, lying down, and highly nourishing food, good Rhine wine, Cognac, strong coffee or tea, alternating with strong broth; for thirst, cold Sprudel water. He improved much till August 7, when imprudent efforts at walking brought on a relapse. He had gone to the Spa to drink the waters. At 6 P.M. his pulse was almost imperceptible, very irregular, varying between 40 and 50 per minute. Respirations 40. Temperature 36.4° Cent. (97.4° Fahr.). His breath was very short, and muscular weakness was extreme. He was ordered carbonate of ammonia, and strong coffee, with brandy; mustard to the chest; absolute rest, etc. At 8 P.M. there was slight improvement, but at midnight he grew worse, had vomiting, and felt very ill, and faint. At 6 A.M. on August 8 (next day) he became comatose; his pulse was imperceptible, and he had tracheal râles; $15\frac{1}{2}$ grains of musk revived him for an hour, but he relapsed into coma, and died the same night. The practical lesson is—ascertain the power and condition of the heart in all diabetic cases. If we suspect fatty or any other degeneration, strictly limit all muscular movements. Nourishing diet, moderate use of stimulants, chalybeates, and residence in a pure, dry, bracing air may all do much to retard the fatal end. Urgent symptoms demand absolute rest in bed, and the use of stronger stimulants.

MAPOTHER ON TOPICAL BLOOD-LETTING.

In a paper on topical blood-letting, read by Dr. E. D. Mapother before the Surgical Society of Ireland, and published in the *Dublin Journal of Medical Science* for March, the author said that when we draw blood by leeching, cupping, or incision, to relieve hyperæmia of organs or regions, we do not expect that the abstraction from the amount of the entire circulating fluid will afford the aid which is so often given. Each leech, for instance, removes scarcely $\frac{1}{500}$ th of the total blood, and a dozen of them applied to an adult cannot be supposed to depress sensibly the general vaso-motor force. For the control of the vaso-motor influence of a special organ or region, no therapeutical agent can as yet be selected with confidence.

Topical blood-letting acts in two different ways; namely (1), by deriving from the arterial circulation of the affected part—that is, letting blood easily escape from other vessels having a common origin; and (2), by emptying the veins which carry back the blood from the part to the heart. The vessels then can resume their normal calibre, and can take up effused materials, which they do with surprising quickness.

The blood returning from an inflamed organ is that most altered by the pathological process. For this reason, and to give direct relief to the vessels of the part, we should, if possible, drain from the actual vein, or the veins with which it connects most fully and quickly, provided they be within reach.

The ophthalmic vein empties into the cavernous sinus, which connects with the two petrosal and lateral sinuses. By leeching, therefore, near the angle of the lower jaw, and over the mastoid emissary vein, we drain very directly from the eye; and there is now in St. Vincent's Hospital a man whose eye was saved from the ravages of iritis by these means. The late Professor Jacob always selected this point for leeching in ophthalmic cases. That it was the usual bleeding point in every form of disease among the Egyptians appears from the writings of Alpinus 300 years ago.

The cerebral hemispheres send their blood back by the superior longitudinal sinus, which freely communicates with veins on the septum of the nose, through the foramen cæcum, and, with those of the scalp, through the parietal foramen, about one inch and a half in front of the posterior superior angle of that bone. If delirium pointing to active, or coma to passive hyperæmia suggest blood-letting, it can be done on the nasal septum—a place from which salutary bleeding often arises. In no part of the mucous tracts are the vessels so near the surface. It may be noted that epistaxis does not occur in domesticated animals, and in their skulls the foramen cæcum (or, as it might be better named, the superior ethmo-frontal opening) does not exist. The circulation in these creatures is not urged on occasions such as arise in man's brain-work, and their horizontal posture renders valves in the veins of the head and neck useful, whereas man does not possess them. Epistaxis can never be regarded as a mere local flow, but as an escape for congestions of more important parts than the nasal septum. If the site of the emissary parietal veins, which is about four inches in front of the occipital protuberance, be made clear for leeches, by cutting the hair and washing the scalp, blood will freely flow.

In sunstroke and in severe concussion, it is be-

lieved that considerable and sudden arrest of circulation occurs, and blood-letting at the above-named points would be indicated.

Extensive and promiscuous leeching of the scalp can only act in the way of general blood-letting.

If hemiplegic symptoms show that the base of the brain needs depletion, leeching over the mastoids will give any amount from the lateral sinuses. Otitis is relieved in the same way, as all the blood of the organ of hearing escapes by the same channel. The spinal veins are so intricate in their communications, that depletion of any of them may be easily secured by drawing from the skin over any part of the vertebral column. The ready action of irritants like blisters or depressants, like cold in the same region, may be similarly explained. The great drain which aspiration to the chest secures might be utilised in head and spinal congestions by augmenting inspirations in the way suggested, for drowned persons, by Silvester, even if the patient were comatose.

The face and neck are more easily drained of blood than any other region, owing to the absence of valves in the veins; and leeches near the angle of the jaw will draw both from the sinuses and from the tonsillitic and palatine veins, all of which freely communicate with the pterygoid plexus. If, however, a congested or oedematous spot along the mouth, pharynx, or larynx, can be reached, the scarificator is to be trusted.

The difficulties and danger of jugular venesection have banished the operation, but all its advantages can be had by leeching over the thyroid body, as the venous plexus there freely joins the superficial and deep vessels, returning from the head to the innominate veins. The rate of venous flow is here 200 feet per minute, while in remote veins it is not one-tenth as rapid. The small size and compressibility of these vessels insures that canalisation is unlikely, and the flow from the leech-bites can be easily stayed. Leeches over the sternum can scarcely relieve congestion in the larynx or trachea, while they would draw very directly if fixed near the thyroid veins. The veins from the pericardium mainly return to the internal mammary, and would be drained by leeches over the third, fourth, and fifth intercostal spaces at the edge of the sternum, especially on the left side. If, as often occurs, there be pleuritis as well, the leeches will serve a double purpose, for the pleural veins also empty at these spots. Here, also, as the arteries supplying those membranes and the veins returning their blood are so closely contiguous, local blood-letting would act in both the ways I have mentioned—the deriving from neighbouring arteries and the emptying of veins returning from the inflamed part.

The lungs, clothed with serous membranes which isolate them from the chest-walls, cannot be depleted by draining the surface of the front, sides, or lower part of the back of this region, but may on the left side, where the superior intercostal receives the bronchial veins near the fifth intercostal space. At about the third intercostal space of the right side the bronchial veins join the azygos, a trunk which has already received the intercostals and left bronchial veins. The bronchial vessels mainly supply the mucous surface, and can be drained by the sources just mentioned. The fittest site for leeching would then be over the third space, between the spine and scapula. In St. Vincent's Hospital, a girl recovering from acute rheumatism was seized with sudden and intense dyspnoea, due, it was believed, to pulmonary

embolism. Free leeching in the place indicated gave the most surprising relief. Congestion of the pulmonary circulation, such as has been often seen during the past two months of bronchitic mortality, could be better relieved by leeching over the thyroid plexus. When surgical injuries to the lungs arrest breathing power, the right heart must be distended, and thyroid bleeding seems clearly indicated. The same step seems most advisable in all those frequent medical cases which obstruct the pulmonary circulation, and overload and palsy the right ventricle. Over forty years ago Professor John Reid proved the wonderful preventive power of jugular bleeding—especially from the lower orifice—over death in drowned and hanged animals, and those poisoned by drugs which paralyse muscular tissue. At all times, blood easily passes between the right auricle and ventricle.

The abdominal wall is supplied by the internal mammary, lower intercostal, and epigastric vessels, while the organs within are connected with the aorta, portal, and inferior caval veins. They are, moreover, separated by a great serous cavity. Leeching the skin of the belly may, therefore, drain the inflamed parietal peritoneum, but cannot sensibly affect the circulation in the stomach, intestines, liver, or spleen. These organs return their blood by the portal vein, and draining it at the rectum is the fittest indication when they are congested or inflamed.

If Luschka's statement, that the umbilical vein, or ligamentum teres, of the adult is constantly pervious from the left branch of the portal to the deep epigastric, be correct, leeching round the navel may be direct and effectual in inflammations of the liver and all other organs discharging blood by the portal vein. This anatomical point, however, requires confirmation.

For acute dysentery of the tropics and other inflammatory affections of the abdominal organs, a hundred or two of leeches have been used without avail, according to writers of the last generation, while half as much blood drawn quickly from the arm produced a profound impression on the system.

There is no organ which has so special a blood-supply as the kidney. Insulated in a mass of fat, it joins no other part by vessels except on the left side of the testis, by the spermatic.

Renal congestion can, therefore, be scarcely influenced by leeching or cupping the loins; and the good supposed to follow them must be attributed to the warmth, rest, and low diet which usually are enforced, the first determining to the skin to the relief of the renal arteries; the others checking the formation of nitrogenised compounds. The labour of the organ is lessened by all these means.

The testicle returns its blood by the spermatic veins; and as these vessels pass through the groins and join the superficial veins of the region, leeching there is best calculated to relieve the organ. The veins of the scrotum return to the superficial pubic and epigastric, and puncturing them I have found valueless in cases of orchitis, whilst the risks of erysipelas or ecchymosis forbid leeches. Puncturing as deep as the tunica albuginea has been recently urged by Mr. Henry Smith, and it probably does the good by the loss of blood from the congested vessels. If the inflammation is confined to the epididymis, as is usually the case, puncturing the fibrous capsule of the body of the organ could scarcely act by lessening tension.

The anus has been often selected for leeching in hepatic congestions, but as it is only the superior hæmorrhoidal veins which return to the portal vein, any external bleeding can only be indirect. The middle and inferior hæmorrhoidal veins go to the internal iliac. In the male nothing can be more intimate than the anastomosis between the veins of the bladder and prostate and rectum, and hæmorrhage from one of these regions is often vicarious with that of the other. Mr. Fleming will recollect a case which we both saw, in which the cessation of hæmorrhoidal bleeding was followed by hæmaturia, the source of the blood being clearly vesical.

To draw blood in acute cystitis or prostatitis the surface of the rectum is the fit site; and as leeches will scarcely fix there, it is better to puncture one or two veins with a narrow long bistoury, the gut being held open by a speculum.

Concerning obstetric subjects, I always speak with diffidence. While it must be acknowledged that we have learned much from the practice of letting blood by direct incision of the womb for congestive or inflammatory affections, it appears necessary that in the case of virgins we should seek some other source for depletion—the need, on account of moral reasons, is obvious—and anatomically the uterine plexus is slightly developed in the unimpregnated, and depletion from the labia or rectum will drain more fully. Around the rectum there is a free junction between the superior hæmorrhoidal and uterine veins.

The veins in the limbs, deep and superficial, join at most numerous points, in order that the circulation shall not be interrupted during muscular action. Leeching the skin over an inflamed joint or periosteum is, therefore, the same as opening the vessels coming from the invaded part, and hence the undoubted efficacy of the measure in such cases. By the way, it is remarkable that we so rarely find the muscles the seat of inflammatory action. The rapid flow of blood, urged on by the muscles themselves, which are like hearts to the veins, may account for the immunity, whereas the fibrous tissues, sparingly supplied, are often inflamed in the subacute way, and topical blood-letting is most efficacious. When treating aneurisms by complete pressure, leeching over the sac should give aid, by lessening the tension of the arrested blood, relieving it of serum and increasing the fibrin. In cutaneous inflammations, erysipelas, acne, &c., the flow of blood and its effused fluids by incisions is too obviously efficacious to need comment.

Venesection at the bend of the elbow is almost a thing of the past, and to the question of general blood-letting I do not allude, but in severe whitlows and synovitis of the wrist-joint it gives striking relief as a topical measure.

The same may be true of opening the internal saphena vein in acute inflammation of any part of the lower extremity.

As to the modes of topical bleeding, leeching is very generally applicable, and the German practice of puncturing the left side of the animal so as to open the last of the gastric pouches—bdellotomy, as it is termed—is worthy of imitation, as blood flows far more rapidly, and the quantity is trebled from each bite. Cupping over the bites when the leeches have dropped off draws blood quicker than stuping, and the bleeding will more readily stop, for the blood coagulates, its gases being exhausted.

Still, without dread, we cannot order the introduc-

tion of leeches into the nasal, pharyngeal, rectal, or vaginal cavities; and puncturing the veinlets and aiding the flow by irrigation with warm water may be well substituted. Incisions draw blood more quickly, and the bleeding is more easily stopped. I have often bled from the nasal septum by touching the mucous membrane at three or four points with a sharp long bistoury, the ala nasi being fully everted. The curved abscess lancet, or the pointed uterine scarificator of Meyer, is in some situations more convenient. Collin's modification of Baron Heurteloup's artificial leech is most effectual on the skin, and it might be lengthened to suit for use in mucous passages. The circular shape of the blade secures cross section of the little vessels, and the pump covers six of the incisions if necessary.

Let me now recapitulate some of the organs and the superficial spots whence they may be drained:—The eye at the mastoid process and angle of the jaw; the cerebral hemispheres at the nasal septum and posterior inferior angle of the parietal bone; the base of the brain and the ear at the mastoid process; the right heart over the thyroid body; the pericardium and front of pleuræ outside the caps of the sternum; the lungs along the bases of the scapulæ, and the digestive organs from the rectum. From the veins of this gut also, those of the bladder and prostate, uterus and ovaries, can be depleted.

ANATOMY AND PHYSIOLOGY.

SCHMIDT ON THE RELATION OF THE COAGULATION OF FIBRIN TO THE CORPUSCLES OF THE BLOOD.—Alex. Schmidt (*Pflüger's Archiv*, vol. xi., and *Centralblatt für die Medicinischen Wissenschaften*, no. 11, 1876) in the first part of his communication discusses the cause of the coagulation of the fibrin of the blood. The artificial formation of fibrin from its factors, fibrinogen and fibrinoplastin (and the fibrin-ferment, which, as a rule, adheres to the fibrinoplastin), only succeeds when one of the two factors is employed in its natural solution; but the result does not take place when both substances are mixed with each other in a weak solution of caustic soda. This observation forms the basis of the new experiments of the author. In the course of his observations, Schmidt found that the presence of neutral salts is necessary for the formation of fibrin, just as for the coagulation of albumen at a high temperature. If the soluble salts be removed by dialysis from the fluids which, when mixed, yield fibrin, and if the precipitates (fibrin-forming substances) thereby deposited be brought into solution by a minimum addition of caustic soda, and the two fluids be now mixed, no formation of fibrin occurs. If, however, some of the diffusate, concentrated by evaporation, be added, fibrin is excreted. The same effect is produced by adding a solution of common salt to the extent that the fluid contains 0·8 to 1 per cent. For the formation of fibrin, therefore, a certain relative proportion of salts is necessary, and hence the reason why fluids obtained from the body after dilution with water yield no fibrin. Pericardial fluid yielded 0·132 per cent. of fibrin; diluted with an equal volume of water only 0·083 per cent.; plasma of horse's blood yielded 0·726 per cent.; diluted with one-third its volume of water, 0·689; and with an equal bulk of water, 0·617 per cent. If plasma be diluted with ten to twelve

volumes of water, only a very inconsiderable excretion of fibrin takes place, and that very slowly. If, on the contrary, chloride of sodium be added till the fluid contains one per cent. of the salt, the normal amount of fibrin is obtained. Some other salts, as is known, have the same action. Thus, by the addition of one part of a twenty-five per cent. solution of sulphate of magnesia to three or four parts of blood, coagulation may be entirely prevented, while a solution of common salt partly counteracts this effect. By dialysis of fluids which yield fibrin, the active substances are completely excreted in an insoluble form, so that the filtered fluids, on the addition of common salt, yield no fibrin, but the part remaining on the filter dissolved in weak caustic soda does.

The author then discusses the question how solutions are to be prepared which contain only one of the three factors necessary for the formation of fibrin.

1. *The Fibrin-Ferment*.—The method originally indicated by the author requires correction in one point: the alcohol must act for a very long time, three or four months, upon the albuminous coagulum. If this be not done, the solution of the ferment also contains fibrinoplastic substance, so that it can cause coagulation in solutions which contain fibrinogen alone.

2. *Fibrinogen*.—Fluids which contain this substance are much more numerous, such as the pericardial fluid of the horse, and hydrocele fluid.

3. *Fibrinoplastin* is best prepared from egg-albumen, which very rarely contains any trace of ferment. If the salts be removed by rapid dialysis, the fibrinoplastin is excreted in the insoluble form; it is then washed in water and employed either solid or in solution.

After having prepared these three substances, one may convince himself of the necessity of all three for the production of coagulation. Coagulation occurs with a neutral, feebly alkaline, or feebly acid reaction; an obvious acid reaction prevents it entirely. The quantity of fibrin obtained depends on the temperature. The physical condition of the fibrin depends upon the rapidity of its excretion. If this occur very slowly, the coagulum is very loose, breaks up easily, and is generally re-dissolved in the course of twenty-four hours, so that it entirely disappears from view. In another section, the author treats of the dependence of the quantity of fibrin on the quantity of the fibrinoplastic substance added. To equal quantities of transudations or blood-plasma—when necessary, previously deprived by filtration at 0° of colourless corpuscles—varying quantities of pure precipitated fibrinoplastin, either in the solid form or dissolved in soda, were added, and the fibrin formed was, after twenty-four hours, separated by filtration, washed with water, alcohol, and ether, dried and weighed. In the later experiments, in order to hasten coagulation, a small quantity of dissolved amorphous hæmoglobin was added. It is shown that up to a certain limit the quantity of fibrin increases with the amount of fibrinoplastin added, but not in direct proportion thereto. If too much fibrinoplastin be added, coagulation is very imperfect. Experiment II., hydrocele fluid free from fibrinoplastin, may serve as an example:

Fibrinoplastin added (f.)	Fibrin obtained (F.)	Ratio of F. to f.
1. 0.462	0.087	0.19
2. 0.924	0.098	0.11
3. 1.386	0.106	0.08
4. 1.848	0.116	0.06

The addition of hæmoglobin accelerates the excretion of fibrin, but does not increase the amount excreted. Solutions of fibrin-ferment injected into the jugular vein of the living animal did not produce coagulation, notwithstanding that the blood at first contained a considerable amount of the fibrin ferment, which had not entirely disappeared after twenty-four hours. It is therefore shown that the living organism gradually destroys the fibrin ferment, but paralyses its action in some way as long as it exists. The author then replies to Eichwald, Gorup-Besanez, and Heynsius, for which we must refer to the original. W. STIRLING, D.Sc., M.D.

MOJSISOVICS ON THE TERMINATION OF THE NERVES IN THE EPIDERMIS OF MAMMALIA.—The author's observations (*Sitz-bericht der K. Akad. der Wissenschaften*, Band lxxi.) were made on the sensitive hairless skin which covers the central part of the snout of the swine.

Nerve-fibrils from the papillæ, or direct from the cutis, enter the rete Malpighii. Some of them ascend in a winding manner towards the surface of the epidermis, becoming smaller and varicose as they approach the horny layer. Some send branches downwards, which anastomose with those which have entered at the base between the papillæ.

The fibrils that go towards the horny layer bifurcate. They do not appear to anastomose. They pass between the cells, approach very close to the horny layer, and some of them seem to end in club-shaped swellings, which are similar to those described by Cohnheim in the corneal epithelium.

After maceration in a 35 per cent. solution of caustic potash, the cells disappeared, leaving the nerve-skeleton with its branches and end-swellings intact. A corresponding arrangement was found in the epithelium of the hair-sheaths. G. THIN, M.D.

DASTRE ON THE FETAL PLACENTA OF THE PACHYDERMATA.—At a recent meeting of the Biological Society of Paris (*Annales de Gynéc.*, January 7, 1876), M. Dastre communicated the result of his researches. In the pig, the villous folds which constitute the placenta are disposed in a radiating manner around the little bald or smooth centres. The structure of the stroma of the chorion is modified at these points. Moreover, the villousities do not extend over the whole surface of the chorion: they leave free in one part and another of the middle zone two ill-determined bands. Each half of the sac of the chorion is divided into three zones: a middle zone, vascular and villous; a zone vascular only but not villous, a continuation of the former; finally, a third zone (horns of the chorion), which is neither vascular nor villous. In the thickness of the stroma of the chorion of ruminants and pachydermata, there is found, in addition, a network of chalky aspect, formed principally by a deposit of phosphate of lime. The chorion plates of this deposit are in an intimate relation with the function of the fetal placenta. But among the pachydermata they occupy the same situation as the villousities: they exist only in the middle zone. ARTHUR W. EDIS, M.D.

ROGET ON THE DEVELOPMENT OF NERVES IN BATRACHIANS.—M. Charles Roget, of Montpellier, publishes an elaborate memoir in the *Archives de Physiologie*, in which he gives a description of the first appearance of nerve-terminations in the early stages of the development of the tail of different forms of Batrachians. Having removed the epi-

thelium from the flat expansion (*membrane nataoire*) of the tail at the moment of hatching, he found, even at that early period, a complete set of cutaneous nerves, which were chiefly composed of fine moniliform fibrillæ, similar to those with which histologists are familiar in the cornea and tongue of adult frogs, and in the terminal branches of the olfactory nerves. Many of these fibrillæ present the same histological characters as the fine filaments which form the ramifications between the cells in the grey substance. These fibrillæ appear at first sight naked, but on closer examination they are found to possess a thin external coat or covering of a protoplasmic material, which here and there, at the point of bifurcation, is collected into small nodosity. The fibrillæ M. Roget regards as rudimentary axis-cylinders, of which the protoplasmic covering is the beginning of the primitive sheath. In the swellings which occur at the junctures, nuclei make their appearance apparently spontaneously (*noyaux autogènes*), without the pre-existence of any such elements; these then multiply and extend along the fibril, so as to form a continuous sheath containing nuclei. At the same time the primitive fibrillæ increase in thickness and in number, by a form of reduplication of the pre-existing fibrillæ, so that finally a compound axis cylinder is formed, which is contained in a delicate sheath of protoplasm. In some of the fibres there then appears a third element between the two pre-existing; by a form of infiltration of myaline within the delicate sheath, distinct medullated fibres are formed. These do not undergo subdivision, or apparently any further change, but the fibres which are still without medullary covering continue to increase in number and size, and by successive divisions new sets of branches are formed. The first appearance of these is always the same fine moniliform fibrilla, which subsequently increases in size. The paper is embellished by six well-executed plates.

BROWN-SÉQUARD ON THE IRRITABILITY OF THE CEREBRAL LOBES.—In the first of a series of papers which Dr. Brown-Séquard announces on the above subject in the *Archives de Physiologie*, he describes the effects of irritation of the surface of the brain with the actual cautery. From a number of experiments he comes to the following conclusions. 1. Mechanical, and more especially thermic, stimuli applied to the scalp or meninges, produce on the side of experiment the various phenomena which follow section of the cervical sympathetic. 2. The same phenomena are produced in a more marked degree when the stimulus is applied to the surface of the hemisphere of the brain. The middle lobe gives the most striking results, the anterior lobe the least so. 3. The degree of paralysis of the cervical sympathetic is in proportion to the amount of the stimulus, and to the extent of surface to which it has been applied. 4. He concludes that it is thus demonstrated that the lobes of the brain are capable of excitation by mechanical and thermic irritation, just as they are known to respond to electric stimuli.

BABER ON THE STRUCTURE OF HYALINE CARTILAGE.—Mr. E. C. Baber (*Journal of Anatomy and Physiology*, vol. x.) arrives at the following results in the course of experiments undertaken to verify these statements made by Dr. Hermann Tilmanns ('Contributions to the Histology of the Joints,' Max Schultze's *Archiv für Mikroskopische Anatomie*, vol. x. part iv.), 'that a moderately

strong solution of permanganate of potash or a ten-per-cent. solution of chloride of sodium broke up the hyaline matrix of the cartilage into fibrils undistinguishable from those of connective tissue, but that the cell-territories, shown by the action of chlorate of potash and nitric acid, did not appear, although with the permanganate solution the cartilage-cells became free and lay isolated between the bundles of fibrils.'

Mr. Baber found that sections of the cartilage of femoral condyles of a freshly killed rabbit or kitten, and of the kitten's costal cartilage, when treated with permanganate of potash solution, of strengths varying from $\frac{1}{16}$ to $\frac{1}{50}$ per cent., showed under slight pressure traces of fibrillation in four or five days, but that with solutions of greater strength the cartilage broke up without any trace of fibrillation.

Moreover, he found that the results, when the fluid was changed several times a day (a point insisted on by Tilmanns), were no better than if it were not changed at all.

In a ten-per-cent. solution of common salt, similar sections of cartilage under slight pressure presented distinct fibrillation after maceration varying from four days to a fortnight. This fibrillation was found to disappear at times whilst under observation, but could be reproduced by pressure, carefully avoiding any shifting of the cover glass, as this caused it to disappear, and it could not subsequently be remedied.

The cartilaginous expansion of the shoulder-girdle of the newt was also treated with a ten-per-cent. solution of chloride of sodium both with and without pressure, but without producing any trace of fibrillation.

The cartilaginous expansion of the shoulder-girdle of the newt, and sections of costal cartilages and cartilages from the femoral condyles of the kitten, examined in baryta water after maceration for half, three-quarters, one, one and a-half, two, and three hours respectively, presented well-marked fibrillation with pressure and occasionally without it; but it soaked for a day or more, no fibrillation was visible, except in one specimen of femoral cartilage of the kitten, which, after thirty hours' maceration, presented it well marked under firm pressure.

In lime-water, sections of the femoral and costal cartilages of the kitten, and also the cartilaginous expansion of the shoulder-girdle of the newt, showed well-marked fibrillation in the course of a few days, both with and without pressure.

Finally, Mr. Baber found that the cartilage of the femoral condyles of the kitten, in $\frac{1}{2}$ per cent. solution of sodium chloride, showed abundant fibrillation with pressure in the course of a few days.

With regard to the character of the fibrillation, the author states that it appears both complete and incomplete, both forms commonly occurring in the same specimen. When complete, it consists of a very fine but distinct more or less parallel and wavy striation, which can be traced above or beneath each cartilage-cell, as the case may be. Not uncommonly, in incomplete fibrillation, the striæ appear to run principally from cell to cell or for a short distance on one or both sides of a cell; and in this case also can always be followed either under or over each cell. He considers that this appearance may be produced thus. Assuming the cartilage-cells to be more resistant than the matrix, or at any rate to have become so by maceration (a fact which seems probable from the matrix breaking up under pressure, and allowing

the cells to escape into the surrounding medium), then those portions of the matrix situate under or over a cell will on pressure be subject to greater compression than the other parts, and it is therefore here that the fibrillation first appears.

In the longitudinal sections of cartilage from the joints, the direction of the fibres appeared to be at right angles to the joint surface, while in transverse sections they ran in various directions. Thus Mr. Baber agrees with Tilmanns that the hyaline matrix is made up of fine fibrils, cartilage-fibres, held together by an interfibrillar cementing substance which can be dissolved by certain reagents. Dr. Hermann Tilmanns, however, finds a ten-per-cent. salt solution far inferior to solution of permanganate of potash, and it is this that he recommends. Mr. Baber finds the effects of permanganate of potash solution very slight and uncertain, whereas common salt solution (both $\frac{1}{2}$ and 10 per cent.) and lime-water produced the required effect readily if followed by pressure.

The experiment with $\frac{1}{2}$ per cent. salt solution Mr. Baber lays great stress upon, as probably explaining the occurrence of physiological fibrillation of the matrix on the free surface of the hyaline cartilage of joints: for the cartilage is here bathed with synovial fluid, and pressure is applied to it by the contact of the opposing joint-surfaces:

RECENT PAPERS.

A Study of the Female Pelvis. By Dr. H. G. Landis. (*American Journal of Medical Sciences*, April.)

The Cause of the Coagulation of the Blood. By Dr. P. Mantegazza. (*Gazzetta Medica Italiana-Lombardia*, April, 22.)

Contributions to the Physiology of the Vagus Nerve. By Dr. M. J. Rossbach. (*Verhandlungen des Physikal.-Medicin. Gesellschaft in Würzburg*, Band ix. 1875.)

On the Reflex Functions of the Spinal Cord. By Dr. Stirling. (*Edinburgh Medical Journal*, April.)

Observations demonstrating the Influence of Digestion in the Mother upon the Frequency of the Fœtal Pulse. By Mr. C. G. R. Naylor. (*Ibid.* May.)

The Mechanism of the Hip-Joint. By Professor E. Albert. (*Medizinische Jahrbücher*, 1876, 2nd Heft.)

Anatomy of the Pacinian Corpuscles. By Dr. A. Genersich. (*Ibid.*)

PATHOLOGY.

COLOMIATTI ON A LIPOMA OF THE CERVICAL SYMPATHETIC.—In the *Gazzetta delle Cliniche* of February 8, Dr. Colomiatti describes certain appearances which he found in the necropsy of a person who had died of pulmonary and laryngeal phthisis. He specially examined the cervical sympathetic on both sides, some of the dorsal and abdominal ganglia, and the ganglia of the solar plexus. None of these presented to the naked eye any remarkable appearances, except the first cervical ganglion on the left side, which was about one-third larger than its fellow. It was rather soft, especially at the middle part, which appeared somewhat swollen.

Having divided it transversely through the middle part, Dr. Colomiatti found in the centre a yellowish mass as large as a millet-seed. At first he believed it to be caseous, especially as, as has been said, the cause of death was phthisis. On examination, however, he found it to be a lipoma, containing large so-called fat-cells, resembling those found in lipomata in other parts of the body. After treating the ganglion with Müller's solution for nine days, he made various sections through the tumour. The

mass, which was nearly spherical, was joined by a small peduncle to the periganglionic connective tissue, from which numerous fibrils proceeded towards the centre of the tumour, enclosing a vascular loop. Around the tumour were some fascicles of connective tissue arranged in the form of an incomplete capsule.

Dr. Colomiatti, in conclusion, remarks that lipoma in the sympathetic ganglion has not hitherto been described; and thus sums up the other appearances which he found in the ganglion under consideration.

1. Increase of the interstitial fibrillar connective tissue between the nervous elements, and especially of the perivascular tissue.

2. Irregular dilatation of the small veins.

3. Tumefaction of the nuclei, especially of the epithelioid cells lining the capsule which enclosed the giant-cells, and the frequent presence of two nuclei in their protoplasm.

4. The complete homogeneity of a large protoplasmatic zone surrounding some of the ganglion-cells, with central accumulation of pigment-granules in the same (*sclerosis*, which Lubimoff found in a case of diabetes mellitus, and in two cases of diffuse purulent peritonitis.)

5. A kind of alveolar atrophy, proceeding from the periphery to the centre, in many of the ganglion-cells, many of which were reduced to a simple protoplasmatic network, thickly pigmented, surrounding the nucleus, and containing in its meshes sometimes a few drops of fat, but generally round cells, many like migratory cells.

A. HENRY, M.D.

ORTH ON LOCALISED TUBERCULOSIS OF THE LIVER.—Two cases are recorded by Dr. Orth in Virchow's *Archiv*, Band lxvi. Heft 1, of this somewhat rare form of disease. The first is one of general tuberculosis of miliary kind in the lung, spleen, kidneys, liver, testes, and choroid. The liver was enlarged, and its section studded with small round tubercles, in great number; and, in addition, in the substance of the right lobe was a caseous nodule, of the size of a walnut. Between these two forms, the caseous and the miliary, were others which were obviously the offspring of the small simple tubercle; from which it is concluded that the yellow caseous nodule was also formed by the conglomeration of many smaller nodules.

The second case is of some practical importance, because the tumour in the liver could be felt through the abdominal wall, and thus gave rise to the diagnosis of cancer. The patient was an old and wasted woman, aged fifty-nine years. The liver contained tubercle and cheesy nodules. The portal, lumbar, and epigastric (?) glands were caseous. The peritoneum was tuberculated, and there were chronic caseous peribronchitis, brown atrophy of the heart, granular kidneys, and intestinal catarrh.

The whole of the fore border of the liver, particularly round about the gall-bladder, was implicated in an irregular bossy yellowish tumour, to which some large lymph-glands and the duodenum were united. Throughout the liver-substance were other smaller masses, and the whole peritoneum was studded with miliary tubercles. The microscopical examination left no doubt of the tubercular nature of the larger liver-tumour. From the large size of the main tumour, the still but partial caseation of the lymphatic glands, and the similarity of the microscopical appearances to those met with in yellow tubercle in the brain, the author concludes that the

disease in this case affected the liver first, and thence infected the glands in the portal fissure and behind the peritoneum.

[Both these cases, but especially the latter, are worthy of record, both clinically and pathologically. Somewhat similar ones have at times come before the Pathological Society of London, and have generally excited some discussion. The following may advantageously be contrasted with those recorded by Dr. Orth: *Path. Society Translations*, vol. ii. 182; iii. 353, 355; xviii. 142; xx. 198; xxi. 236, 372; xxv. 142; also a case in the same transactions recorded by the reporter during the present session.—*Rep.*] JAMES F. GOODHART, M.D.

LAVERAN ON REFLEX PARAPLEGIA.—In the *Archives de Physiologie* (vol. xii. p. 866, Dec.) Dr. A. Laveran, of the Val-de-Grâce Hospital, details the case of a man, aged forty, who came under observation with incontinence of urine, cystitis, incomplete paraplegia, secondary abscesses, and considerable fever; symptoms which, he considers, pointed distinctly to the diagnosis of reflex paraplegia, and not of a spinal lesion, as the most important symptoms of myelitis were wanting. After death the morbid changes in the kidney and bladder were very obvious and extensive, while the spinal cord, to the naked eye, appeared perfectly healthy. Under the microscope, however, marked atrophic changes in the nervous element were found associated with considerable proliferation of the connective tissue. The author thinks that many, if not all, of the fatal cases of so-called reflex paraplegia in which the cord is reported to be quite healthy, would probably give the same result if microscopic investigation of the cord had been adequately carried out. G. YEO, M.D.

WINSLOW ON A PECULIAR NEW FORMATION IN THE STERNO-CLEIDO-MASTOID MUSCLE OF A NEWLY BORN CHILD.—At a meeting of the Pathological Society of Philadelphia (*Philadelphia Medical Times*, February 19), Dr. W. H. Winslow asked for information with reference to this growth, seen in a newly born child. It was two-and-a-half inches long and three-quarters of an inch in diameter, cylindrical in shape, with ends slightly rounded. It was very hard, like cartilage, and could be separated somewhat from the surrounding tissues by pressing the fingers in deeply. There were no symptoms of inflammation, or other abnormal manifestations, connected with it. It was situated longitudinally along the anterior border of the left sterno-cleido-mastoid muscle, and was at first supposed to be connected with its sheath and that of the vessels beneath.

No treatment was instituted, and it gradually disappeared, until at the end of the third month no sign of its presence remained. The mother had received no injury during pregnancy; the labour was a normal and easy one, and the child was received tenderly and carefully. The mother was slightly scrofulous, but enjoyed good enough health, and had two other children living and hearty. The father was a tough Scotchman, in perfect health, and there were no possibilities of a syphilitic taint in the family. The baby was now fat and hearty, and the left sterno-cleido-mastoid was as well developed and as functionally active as the right.

Dr. Ashhurst said that the two most plausible theories which had been advanced to account for these indurations of the sterno-cleido-mastoid muscle

were (1) that the condition resulted from an injury sustained in birth; and (2) that it was a lesion of congenital syphilis.

Dr. Horace Williams said that within the past year he had had two such cases, and had been at a loss to account for them. Both were primiparous labours. One was a breech-presentation, the child being born rapidly, although the mother was forty-three years old. The second was a primipara also, thirty-nine years old, and a difficult forceps case. In the latter case, the swelling was not located over the sterno-cleido-mastoid muscle, but posterior to and below the region of the ear, corresponding very nearly to the position over which one blade of the forceps must have been. Both of these swellings disappeared, the first in eight weeks, and the second in three. Iodide of potassium in compound soap liniment was used as a local application; nothing internally. There was no discoloration of the skin in the second case, nor other condition whence it would be possible to infer that the forceps produced it. Subsequent history entirely free from any specific developments.

Dr. Ashhurst said that it was well known that similar indurations of muscle occurred in cases of acquired syphilis, particularly, as pointed out by Ricord, in the biceps.

BERTOLET ON THE REGENERATION OF NERVES AFTER EXCISION.—At a meeting of the Pathological Society of Philadelphia (*Philadelphia Medical Times*, February 19), Dr. R. M. Bertolet exhibited portions of reproduced nerve derived from the musculo-spiral and the radial. They both exhibited the button-like cicatricial neuromes, the central swelling in both specimens being markedly greater than at the distal end. The intermediate portion, *i.e.* the regenerated part, of the nerve measured over an inch in the former, and nearly two inches in the latter specimen; in both cases it presented medullated nerve-sheaths and sharply defined axis-cylinders, and was indistinguishable, microscopically, from a perfectly normal nerve, thus showing how complete the reparation has been. The musculo-spiral was primarily excised several years ago by Giuseppe Sapolini, and recently again under the direction of Dr. S. Weir Mitchell. The radial was from a case of Dr. H. Lenox Hodge, who, being present, furnished the following history.

On December 5, 1874, Dr. Hodge removed about two inches of the radial nerve on the back of the forearm, after it comes out from under the tendon of the supinator longus. The operation was done on account of long-continued and persistent pain in the back of the hand, accompanied at times with great redness and swelling. The patient was fifteen years of age. After the operation she was perfectly free from pain, and had no sensation in that part when touched. In about six weeks the pain gradually began to return; a few weeks later the tactile sensation also returned. The pain grew worse, and became as severe as at any time before the operation. Nothing gave relief, although every means were employed. As the tactile sensation had returned, as well as the pain, it was evident that the nerve had reunited, and that the pain was not merely subjective and referred to the old part. Therefore, on October 20, 1875, he repeated the operation, and found the nerve, as expected, reunited, with the bulbs of reparation as described by Dr. Bertolet. The distance between these bulbs was one inch and a quarter. At this last operation, he removed three inches of

the nerve and turned back the ends of the distal extremity so as to form a loop, and thus endeavoured to prevent another restoration of the nerve. This operation as well as the preceding was done entirely outside of the deep fascia, and therefore no motor filaments were removed, and no power or motion of the hand or fingers was wanting; nothing was lost but sensation.

HODGE ON CONGENITAL ABSENCE OF THE RADIUS.—Dr. H. Lenox Hodge reported the following case at a meeting of the Pathological Society of Philadelphia (*Philadelphia Medical Times*, February 5). The dissection and memoranda were made by Mr. T. M. Lloyd, student of medicine.

A white male subject, without any previous history, was brought to the Anatomical Rooms of the University of Pennsylvania. The body was well developed in all respects, except the left fore-arm and hand. The apparent age was seventy years.

The left arm was of normal size to the elbow, but the fore-arm was much shorter than normal, being about eight inches in length. The hand and wrist were placed nearly at right angles with the fore-arm, being drawn towards the radial side, the palm looking towards the body. The whole hand was much smaller than its fellow of the opposite side; the thumb especially was very small, its metacarpal bone lying almost in front of the metacarpal bone of the index-finger, so that it was directed towards the palm. No cicatrices were found in the skin.

Upon dissection, no cephalic vein was found, but two large veins were found on the inner side of the arm, one in the normal position of the basilic, the other accompanying the brachial artery. The brachial artery, and the median, ulnar, and internal cutaneous nerves, were in their normal positions, above the elbow; below the elbow, the brachial gave off the radial artery, a small branch going down and supplying the muscles on the outer side of fore-arm, passing over and in front of the metacarpal bone of the thumb to palm of hand. The ulnar artery, the main continuation of the brachial, supplied all the muscles on the inner side of the fore-arm, and formed chiefly the superficial and deep palmar arches of the hand. The radial nerve was not traced below the elbow. A large branch of the median supplied the muscles on the outer side of the fore-arm. The median nerve supplied the flexors, both sides of the thumb, first and second fingers, and radial side of ring-finger. The ulnar nerve supplied the flexor carpi ulnaris, and both sides of the little and one half of ring finger.

The biceps muscle of this, as well as that of the right arm, was supplied with a third head, arising from the upper portion of the shaft of the humerus, and on this side the tendon of the biceps was inserted into the coronoid process of the ulna. A flat triangular muscle, arising from the internal condyloid ridge, converged to a tendon and joined that of the biceps. A muscle supposed to be the supinator longus had a normal origin for that muscle, but extended across the elbow-joint anteriorly, and was inserted into the intermuscular septum on the inner side of the arm. The origin of the brachialis anticus was normal; its insertion was at the inferior extremity of humerus anterior to the joint and coronoid process of the ulna, beneath the insertion of the tendon of the biceps. The flexors sublimis digitorum and profundus digitorum had a common origin from the upper two-thirds of the ulna, on the inner side,

and the intermuscular septum between these and the flexor carpi ulnaris, and had normal insertions. The flexor carpi ulnaris was well developed, had its origin from the inferior extremity of the humerus, and from the whole length of the ulna on its inner and posterior surface (this was the only muscle attached to the posterior surface of the ulna except the triceps, which was inserted into the olecranon, as usual); the insertion was normal.

The extensor communis digitorum had its origin from the anterior surface of the ulna, also receiving a strong tendinous slip from the tendon of the biceps. The tendons of insertion were normal. The extensor carpi ulnaris was well developed; it arose from the upper two-thirds of the ulna, and the intermuscular septums of the triceps; its tendon passed over a groove on the inferior extremity of the ulna, and was inserted into the metacarpal bone of the little finger. The pronators and the extensors and flexors of the thumb and of the radial portion of carpus were absent. The only muscle to the thumb was a small slip, having its origin from the metacarpal bone of the middle finger.

The radial bone was entirely absent. The ulna had a well-marked olecranon and coronoid processes and sigmoid cavity, but was articulated a little nearer the external condyle than normal. The length of the ulna was seven and a-half inches, from the olecranon process to the inferior extremity; its shaft was curved, the concavity being anteriorly. The carpus was articulated on the radial side of the ulna—not at its extremity—and almost at right angles with it.

RECENT PAPERS.

- On the Process of Fever. By Dr. Burdon Sanderson, LL.D., F.R.S. Part II. (*Practitioner*, May.)
 On Atheroma of the Arteries; with Special Reference to its Causes and its Effects. By Dr. A. Curci. (*Lo Sperimentale*, April.)
 On Inflammation. By Dr. Thin. Conclusion of Series of Papers. (*Edinburgh Medical Journal*, April.)
 Contribution to the Pathological Anatomy of Aortic Insufficiency. By M. N. Perreymond. (*L'Union Médicale*, April 15.)
 Melanotic Cancer of the Liver and Generalised Melanosis. By M. Edward Goetz. (*Ibid.* May 2.)
 On a Remarkable Kind of Degeneration of Pus-cells. By Dr. R. Arndt. (*Berliner Klinische Wochenschrift*, May 8.)
 Obliteration of the Aorta at the Region of the Ductus Botalli. By Dr. J. Hornung. (*Wiener Medizinische Wochenschrift*, April 15.)

MEDICINE.

ROHLFS ON WERLHOF'S DISEASE (PURPURA).—Dr. Heinrich Rohlf, of Göttingen, publishes a very learned and critical paper on purpura in *Betz's Memorabilien* (Jahrgang xx. Heft 10), from which we extract the following. It is now more than a hundred years ago since Werlhof first distinguished this disease, and yet its nature and pathology are by no means matters of general agreement. Perhaps Werlhof's treatment by bark and acids is still one of the best methods. Dr. Rohlf says he has only met with four cases in twenty-five years of practice.

The first of these is detailed at some length. The patient, a native of Newcastle, was a delicate blonde, aged seven years. She had had measles two years before. Her parents were in comfortable circumstances. The purpura first attacked her in England a year before, and she was treated by three medical men, not one of whom had ever seen a

similar case. This first time it only lasted fourteen days. On March 14, 1854, she walked a long way to see her aunt, and was overheated. Next day she had severe epistaxis, and red spots appeared on her legs, neck, and face. The day after there were bluish-black discolorations on the legs, and dark patches on the tongue and lower lip. Fresh spots appeared from day to day, and two days afterwards there was a fresh attack of epistaxis. On the 19th there was constipation, on the 20th fresh epistaxis. There was bleeding from the mouth, and the stools were black. After getting nearly well with the use of fruits, mild laxatives, and aromatic sulphuric acid, she had a relapse about April 8 with severe hæmorrhage from the mouth. Bark was then ordered, as well as the acid. On June 1 she was cured; and, although fourteen years have now elapsed, she has had no relapse.

The next case was a boy aged three, whose mother died of phthisis. He also had an attack of purpura when two-and-a-half years old, and five other attacks (lasting three or four weeks) within the next three years. They yielded easily to bark and aromatic sulphuric acid. The boy, just before the attack, began spontaneously to nibble peat. In a subsequent attack he died rather suddenly during an obstinate attack of bleeding from the gums, apparently in a convulsion. It is somewhat singular that in this attack he could not get at any peat, and he had no medical treatment.

The third case was in a very anæmic girl, aged nine years, who had in all eight attacks. Her mother was consumptive, and died young; the father (as in the other cases) appeared strong; the step-mother was a bad manager. The first attack followed an injury to the upper jaw, which broke away a piece of it. It lasted three or four weeks. In the other attacks either violent anger or a chill preceded. Her last attack occurred at the age of seventeen, and whilst she was freely menstruating. In all these cases the patients were badly nourished and anæmic.

In the fourth case, a young girl, the child of healthy parents, was not only well nourished, but had general plethora. Few young girls are so full-blooded—her veins were full; her face, arms, and hands ruddy and blooming. She was six years old when first attacked. From 1863 to 1875 she had twelve attacks in all. During the second illness the treatment was entirely dietetic, with such success, that it only lasted eight or ten days. Twice she had epileptiform seizures after the bleedings. In the seventh attack she had severe hæmorrhage from the kidneys, twice bleeding from the ears. Ergot of rye was a great success in the treatment of the renal hæmorrhage. She menstruated at twelve years. Her two elder sisters did so at the age of eleven.

As regards the bibliography of purpura, Rohlf thinks there is no doubt that Werlhof was the first to describe it as a special disease. He gave it the name of 'morbus maculosus hæmorrhagicus.' Rohlf thinks this name preferable to the pleonastic 'purpura hæmorrhagica' of Lebert, or 'petechiæ sine febre' of others, especially as there may be fever during the course of the disease. Schönlein gives the name of 'peliosis,' and distinguishes peliosis Werlhofii, rheumatica, and senilis. Hebra reckons this disease amongst the symptomatic hæmorrhages of the skin. This classification into idiopathic and symptomatic seems illogical. However, Hebra makes the following varieties: Purpura

rheumatica, P. simplex, P. papulosa, P. hæmorrhagica. Watson (*Principles and Practice of Medicine*), like most modern authors, describes the disease under the name of purpura, and justly remarks that it ought not to be classed as a skin-disease.

As regards its etiology and pathological anatomy, there is a very wide range of opinions. Bischoff ascribes it to 'a relaxed condition of the arterial and venous capillaries, allowing the blood, as it were, to sweat through;' but he allows that the composition of the blood may be at fault, as in scorbutus. The unknown author of a book, called *Recepte und Curmethoden der besten Aerzte aller Zeiten* (Leipzig, 1810), says that for him scurvy and purpura are quite identical. Alibert says that 'purpura is a disease of the rete mucosum of the skin.' This can scarcely be true, since the Malpighian layer is not vascular. Hufeland classes this disease, which he calls hæmatosis, with hæmophilia. Behr (Schmidt's *Encyklopädie*, Band i. p. 585) considers the essence of purpura to be a morbidly excited venosity, a disease of the superficial veins of the skin. Behrens believes it to be a blood-disease, not identical with scurvy. Reil sees in it a paralysis of the terminal arteries. Raimann admits debility of the arterial and absorbent vessels. August Hecker, Senior, and Jaeger consider it a modification of scurvy. Kreysig considers it to depend on disease of the portal vein. Puchelt also attributes it to increased venosity! Bateman considers the disease to be an extravasation beneath the cuticle from the terminal capillaries. He found the spleen much enlarged in a fatal case. Wunderlich admits that there are cases of purpura closely simulating scurvy, although typical cases may differ. Wolf (of Warsaw) again inclines to paresis of the terminal ends of the cutaneous vessels. Dr. Henning (of Zerst, see *Hufeland's Journal*, Band vi. p. 49) attributes the disease not to the blood in general, but to the solid tissues. Fuchs says that 'the disease is generally found in lower-class people who live in small damp dwellings, and are badly nourished.' Felix Niemeyer attributes the morbid condition of the capillary walls to malnutrition, from an insufficient and faulty diet. Watson considers it identical with scurvy. Canstatt is the first to recognise two distinct varieties of purpura; and Marx justly says that the transpiration may as well occur in an inflammatory as in a debilitated state of the blood. Andral had already observed that a great increase of red blood-corpuscles may be a cause of apoplexies and hæmorrhages. Baumgärtner does not admit that purpura always originates like scurvy. He noticed a case in a strong person from suppressed catamenia, which was cured by a bleeding. There is considerable discrepancy as to the pathological anatomy and the constitution of the blood. Thus the extravasations have been found close under the epidermis, partly in the true skin, partly in the subcutaneous areolar tissue; yet there has never been found any inflammatory appearance around the hæmorrhages.

Biet, Rayer and Franz Simon found scarcely any fibrine in the blood, whilst the proportion of corpuscles was nearly normal. Albers (of Bonn), however, noticed the blood coagulate as in health. So did the author in cases 1 and 4, not in 2 and 3. Rokitsky says the petechiæ and ecchymoses are due to decomposition of the blood, and he will not allow them to be really hæmorrhages, but only the transpiration of 'coloured red serum without simul-

taneous extravasation of blood corpuscles.' Stark considers it an efflux of blood in the cellular tissue of the skin and mucous membranes. Wagner says 'small purple-red hæmorrhages under the skin are called purpura. They presuppose a solution of continuity of the walls of the vessels.' Voigtel denies that the petechiæ occupy the Malpighian layer. Andral denies that they are in the sub-mucous connective tissue. Kunz says the hæmorrhages are at varying depths and in different layers of the skin, etc. He says they are found in all the digestive tract, seldom in serous membranes, and seldom in the bronchi. They are not uncommon in the liver, spleen, and parenchyma of the uterus. Watson's views are well known. Bock classes purpura with septic fever and scurvy, and says it is due to a special dyscrasia. The blood is thin, poor in fibrine, and although the corpuscles are numerous, they are partly disorganised. He holds that there is a lesion of blood-vessels. Most pathologists hold this view as to the blood-vessels. But Stricker and Cohnheim have lately lent fresh support to the old views of hæmorrhage *per diabrosin*.

As regards the diagnosis, Wichmann, who writes well on this, errs in denying that the disease may be epidemic—though this is rare—and again in limiting the form of the hæmorrhage and its sites. We may have vibices and ecchymoses; and blood in the urine and fæces is common. The form of the spots may vary. Their colour may be black as well as red. Hæmophilia has bleedings without the spots. The spongy gums of scurvy are not so common in purpura. Again, the exudations amongst the muscles, and the serous hæmorrhages distinguish scurvy. The peculiar fever distinguishes typhus. Scurvy is most common in winter or early spring, and purpura in summer and autumn. Authors differ much as to the frequency of purpura. Henning (Zerbst) practised sixteen years without seeing a case, then one occurred in his practice. Many writers consider it rare. There is pretty general agreement amongst the best authors as to the therapeutics. Werlhof wrote 'acida primis diebus, mediis emulsionibus, postremis corticem adhibui.' He sometimes gave opium with acids and bark—'ut metuenda humorum exsolutio compescatur et fibrarum moderetur irritatio motusque inequalis.' Wunderlich is sceptical as to treatment. Parry was first to propose bleeding. Yet Hebra justly says however good the theory of venesection may be, it is seldom applicable, since the majority of cases are asthenic. Quinine is far inferior to bark. The bowels and diet must be regulated.

The views here expressed may be summarised thus.

1. Purpura is best named as it was by its first discoverer, Werlhof.

2. The source of the hæmorrhages is the capillaries of the skin and mucous membranes, not the Malpighian layer, though the blood may invade this.

3. Purpura is neither scorbutus nor hæmophilia.

4. We have no certain knowledge of the chemistry of the blood in this disease, yet a dyscrasia is probable.

5. There are two forms, an asthenic like cases 1 and 3, and a sthenic like case 4.

6. The cause of the former is probably an altered and impoverished condition of the blood; but diet, cold, over-heating, anger, and excitement, are predisposing causes.

7. The vessels may or may not be lacerated,

hence the extravasations differ in colour, etc. Purpura is a bad name, as pointing only to arterial lesion.

8. In the sthenic or plethoric form the blood is probably too rich in fibrine, and perhaps in corpuscles. In this form there is no disease of the walls of the capillary vessels, the lesion in these being purely mechanical. This form can easily be distinguished from the other by the pulse and the general habit of body.

9. It is only in this sthenic form that blood-letting can find any place in our repertory of remedies.

10. The dietetic as well as medicinal treatment of the two kinds is essentially different. Werlhof's treatment is adopted for the asthenic form of purpura. In the sthenic form expectant treatment is most suitable, and active medicines should only be used when the bleedings are so severe as to induce convulsions, or the induced anæmia threatens collapse, or when some organ like the kidney or lung begins to bleed.

11. The spots in purpura often appear first on the neck, face, and arms, not on the legs, as is often said. It was so in Werlhof's first case (*Opera Omnia*, vol. iii.)

12. The explanations given by Rindfleisch (*Lehrbuch der Pathol. Gewebelehre*) of punctiform hæmorrhages in the brain, viz., atheromatous processes, inflammatory hyperæmia, and embolisms, are not improbably equally applicable to the skin and mucous membranes in purpura. There may be different processes, which it is worth while to study, both clinically and anatomically.

WIDMANN ON INSUFFICIENCY OF THE AURICULO-VENTRICULAR VALVES WITHOUT DEGENERATION, AND ON STENOSIS AND INCOMPETENCY WITHOUT MURMURS.—In the *Allgemeine Wiener Medizinische Zeitung* for October 12, 1875 (no. 41), and following numbers, there is a paper by Dr. O. V. Widmann on the above subject. He draws attention to the frequency of mistakes in the diagnosis of valvular disease of the heart. Murmurs are heard in life, and no lesion is discovered after death. Physiologists and clinical observers are now pretty well agreed as to the cause of the normal sounds of the heart. They are not so unanimous as to the cause of murmurs heard over the cardiac valves, and produced during the heart's action. Skoda and the old German school attribute them all, organic, and inorganic or functional, to friction of the blood. The French more justly attribute many of these to the narrowing or stenosis of the blood-channels setting up waves, the friction of which gives rise to sounds of various kinds. Lateral pressure is also caused by whatever narrows the channel, and this is greatest just in front of and behind the obstruction. The speed of the stream is increased just in front of the stenosis, and the stream tends to spread itself out the moment it has passed the narrowest point; at the same moment the walls of the blood-vessel, when the tension has reached its maximum, tend to approximate again by virtue of their elasticity; and hence secondary vibrations are induced. Thus the production of murmurs in cases of *stenosis* is clearly explicable by ordinary physical laws. In cases of *regurgitation*, the blood being driven with some force through the chink of the valves which do not close properly, doubtless sets the edges of the valves into vibration, just as a current of air does a metal tongue in musical instruments and toys. Thus, to produce a cardiac mur-

mur, the necessary conditions are—(1) A certain force and swiftness of the blood-stream; (2) A certain degree of narrowing of the vessel, or of the chink (or ostium) through which the blood is passing. These conditions also determine the intensity of the murmur; so that, if the heart be weak, there must be considerable stenosis to produce a bruit; if stronger, less narrowing may give a similar result. It follows, therefore, that a small amount of stenosis allows but little regurgitation, and *vice versa*. The dull systolic sound heard in many cases is due to a perversion of the normal first sound, owing to thickening of the valves and cords, etc., and depends a good deal on the strength of the cardiac contractions. The anatomical changes leading to incompetency or insufficiency, are—A. Alterations of the valves themselves, especially (a) of their free edges; thickenings, excrescences, loss of substance, adhesions, etc.; (b) of their surfaces; thickening, shortening, adhesions, etc.; B. Alterations of the apparatus regulating the movements of the auriculo-ventricular (or venous) valves, such as (a) thickening, shortening, and crumpling of the chordæ tendinæ; (b) degeneration, and especially of the fibrous kind, of the muscles attached to them (papillary muscles, columnæ carneæ), by which they lose their elasticity (? contractility—*Rep.*); C. Dilatation of the fibro-cartilaginous ring between the auricle and ventricle alone, or combined with the causes under A or B. The changes inducing stenosis of the venous channels or auriculo-ventricular openings, are (a) irregularities, excrescences, etc., which occur on the free edges of the valves towards the auricles; (b) narrowings, excrescences, etc., of the fibro-cartilaginous rings of the auriculo-ventricular openings; or (c) the causes under (a) and (b) combined. We thus see that there may be causes of murmurs apart from disease of the valves themselves. The degeneration of the carneæ columnæ consequent on myocarditis, as a cause of insufficiency of the auriculo-ventricular valves, was first pointed out by Hamernik (1843-44), then by Dittrich and others. Virchow described the pathology of the muscular changes in Bd. iv. of his *Archiv*. Botkin maintains that we may even diagnose it, and gives it the name of *muscular incompetency*. It occurs transitively in anæmia, malaria, leukæmia, and acute contagious diseases. If permanent, it results from chronic myocarditis. Incompetency from dilatation of the auriculo-ventricular orifice, first described by Gendrin, and denied by Bamberger, has been pretty well settled by Friedreich, Lebert, Perls, and Wulff. It is most common in the tricuspid valve. Therefore, in cases pointing to valvular incompetency, should the valves be healthy, we should not forget the muscles and the fibro-cartilaginous rings. Yet it is certain that there are cases in which the clinical or auscultatory signs of incompetency are all present in a typical manner, and *post mortem* none of the lesions mentioned are discoverable. Such are the cases in which the heart is twisted out of its position ("eine quere Lage annimt") by the pressure of greatly enlarged organs (liver, spleen); the pressure on the heart determines a murmur, just as pressure does on an artery when superficial. Simultaneously the lesser circulation is embarrassed, the second sound is intensified over the pulmonary artery—in fact, all the signs of incompetency are present. Such murmurs are functional or inorganic, since no disease of structure is discoverable *post mortem*. [To these

should be added for completeness, the cases in which the heart or great vessels are twisted and dragged up on to one side by contraction of the lung, or by effusions into the pleural cavity.—*Rep.*] But the cases remain in which there is valvular incompetency, as proved by *post mortem* examination, and no murmur, not even the ghost (Surrogat) of one, can be heard. Forty-four years ago Hope described such cases. More recently Stokes, Buchner, Dieulafoy, etc., have done the same. There are cases, also, affecting the arteries only, which need not engage our attention. It has been said before that, in cases of great incompetency, there may be no bruit even with a swift current of blood. When, therefore, other signs of incompetency are present, and we get no bruit when the heart acts well and quickly, we may conclude that the chink permanently open is a wide one. With weak hearts, the difficulty is still greater. In this way digitalis sometimes helps one to a diagnosis, by rendering the heart's contractions more moderate. We must remember, too, that diastolic bruits are often not heard when there is stenosis of the ostium. Again, nearly all stenoses are coupled with a certain amount of incompetency. The auricles are usually less vigorous than the ventricles, and hence one source of failure in hearing diastolic murmurs. Thus the absence of signs of slight stenosis may be explicable by a large amount of incompetency. The existing chink may be widened by fresh endocarditis or myocarditis; or, in cases of fatty and other degenerations of the heart, the blood stream itself may do it. The following conclusions seem fairly drawn from the above statements.

I. There are cases presenting the physical signs, or clinical picture of incompetency of the auriculo-ventricular openings, in which the *post mortem* examination shows the valves to be intact; but the diagnosis may be considered justified if either (a) a muscular, or (b) a relative, incompetency be demonstrable; and further if the pressure of an enlarged solid organ be proved to have been present. But

II. There are cases wanting the physical signs, and thus the clinical picture is imperfect, in which *post mortem* examination reveals considerable changes in the valves or their regulating apparatus. These are long-standing cases of valvular disease, in which the interval between the incompetent valves is a wide one, and in which also the force of the heart is greatly lessened by endocardial, myocardial, and pericardial diseases or metamorphoses. Thus there is no direct proportion between the loudness of the murmur and the amount of valvular mischief.

[The reporter has but slightly abridged the above, because the subject is of great interest at the present moment; for there is a growing scepticism on the subject both of cardiac and pulmonary auscultation, probably due to the rash interpretation of physical signs or of their absence.—*Rep.*]

KLINGELHOEFFER ON EPIDEMIC JAUNDICE.—Dr. Klingelhoef, of Heusenstamm near Offenbach on the Main, writes as follows in no. 6 of the *Berliner Klinische Wochenschrift* for 1876 (February 7). Very few epidemics of jaundice have been observed, and very few recorded. The epidemic to which attention is now drawn was not so remarkable for intensity, as for its great extent, and for the long time it lasted. Most of the cases occurred in the place where the writer resides, only a few in the neighbourhood. Heusenstamm has from 1,300 to 1,400 inhabitants. Of these only the middle-aged were

attacked; no one under twenty suffered from it. Thirty-five cases were treated by Dr. Klingelhoeffer, but some others were sufferers at the same time. The first case occurred on October 10, 1874, the last on March 24, 1875, so that the epidemic lasted about six months. Both sexes were affected in about the same proportion. All these cases of jaundice were of a catarrhal nature, and all were complicated more or less with catarrh of the stomach. Gastric catarrh is rather common amongst this population, which is chiefly composed of factory-workers, but their attacks generally occur in the summer months. Up to this time there was no general prevalence of this complaint in the autumn and winter months. Jaundice was rare, and months often elapsed without any case of jaundice occurring, except as a secondary complication in other diseases. But, late this autumn and winter, there were a great many cases of gastric catarrh, and nearly all of them were complicated with jaundice. Dr. Klingelhoeffer says that he himself, though by no means a likely subject, suffered from a teasing gastric catarrh, although without any jaundice. No cause can be assigned for the prevalence of gastric catarrh at this time, except the epidemic influence (*Genius epidemicus*). The gastric catarrh usually preceded the jaundice by a few days; in a few cases, however, the jaundice was the first symptom which attracted the patient's attention. There was nothing very peculiar about the jaundice, but all the patients complained of extraordinary feelings of weariness and muscular depression even in the beginning of their malady, before the jaundice was noticeable; indeed the case could often be diagnosed from this symptom. This early prostration is contrary to the opinion of Niemeyer, who considered the loss of power and slowness of the pulse to be a consequence of disturbed digestion, especially of altered absorption of the fat. The patients seldom complained of headache, but almost invariably complained of giddiness. In no case could yellow vision be established. The irritation of the skin was not in proportion to the amount of jaundice. When there was only a slight deposit of bile-pigment in the rete Malpighii, the itching was often very tormenting. In other cases of intense coloration, the itching was entirely absent. The general course of the disease was very mild, with the exception of a few cases to be mentioned presently. A large number of those attacked were not obliged to keep their beds. In the majority of the cases perfect recovery ensued in a few days. The effect of the jaundice on pregnancy, and the severity of the attacks in pregnant and lying-in women, are interesting points; since dangerous symptoms only occurred in these, and premature delivery happened in several cases. The facts are briefly as follows.

Mrs. B. W. suffered from jaundice a few days before delivery, but had no medical advice. She went her full time. On the second day after delivery, Dr. Klingelhoeffer found her deeply jaundiced, and in a state of delirium alternated with sopor and coma; symptoms which could only be attributed to the jaundice, by exclusion of other kinds of disease. She recovered after some days, during which the prognosis was gloomy. The child was put to the breast, even whilst the mother was unconscious; it was never jaundiced, and did well.

Mrs. J. R. was attacked with jaundice in the seventh month of pregnancy; after some days she had wild delirium, alternating with sopor and coma. The child was prematurely born; it lived a few days,

but never took the breast, and died of asthenia. The mother recovered.

Mrs. F. W. became jaundiced in the seventh month of gestation. Premature delivery occurred; the child lived, was jaundiced, and very fretful for want of breast-milk (like all her children), but did well. The mother was intensely jaundiced, but had no very dangerous symptoms. She recovered after a few days.

Mrs. R. B. attacked with jaundice like the other in the seventh month. Premature labour set in, and was completed artificially. The child was not jaundiced, but could not suck, and died exhausted after a few days. The mother soon recovered.

Mrs. Ch. H. had jaundice in the eighth month of pregnancy, with threatening cerebral symptoms; after a few days she had delirium, sopor, and coma; labour set in when she was moribund, and she died in the very act of giving birth to a dead child.

The treatment of these cases was chiefly directed to the gastric catarrh, and principally consisted in regulating the diet, and in the administration of carbonated alkaline and Carlsbad salts, either in small or purgative doses. In the more severe cases, bark and wine were given. Perhaps transfusion might have done them good.

[The reporter, in the absence of any details as to temperature, or the size of the spleen, will not draw any conclusions as to the real nature of this epidemic. It does, however, seem at first glance not unlike some epidemics of relapsing fever, or perhaps more like the 'bilious fever,' well known to many country doctors, though not admitted into our recognised nosologies.—*Rep.*]

FERRAND ON HEPATIC GLYCOGENESIS, AND ON THE USE OF ALKALIES IN DIABETES.—*La France Médicale* for 1876, p. 60, contains a critique by Dr. E. Ferrand on the recent researches of MM. Bretet and Cornillon into the action of alkalies in diabetes. The author commences with a succinct and eulogistic summary of the researches of M. Claude Bernard; as these, however, are at least as well known in this country as in France, and perhaps better appreciated, it is scarcely necessary to reproduce this part of his article. Suffice it to say that he successfully vindicates for M. Bernard the right to rank as first, or at least one of the first, of living physiologists. MM. Bretet and Cornillon agree with Dr. Pavy that alkalies arrest the transformation of glyco-genic material into sugar. There can be no doubt, says M. Ferrand, of the great use of alkaline remedies in some forms of diabetes, but how shall we explain their action? He (? Dr. Pavy) has shown already that alkalies do not destroy the sugar which pre-exists in the blood. If it be not destroyed, is it formed in less quantity in those taking alkalies? Messrs. Bretet and Cornillon think that this is the true explanation. They place a mixture of dry starch, saliva, and water in a matras, and keep it at a temperature of 40° Cent. (104° Fahr.) It is soon transformed into a saccharine solution. This experiment is a familiar one. But if bicarbonate of soda be first added to the water, the quantity of sugar found in this second experiment is as 1 to 2.40 (in equal times) of the first experiment. If caustic potash be substituted for the carbonate of soda, the results are still more striking, for only traces of sugar can be found after prolonged maceration. Experiments made with pancreatic juice have yielded similar results. It is curious to note that the action of bicarbonate of soda is far more evident

with a pig's pancreas than with that of an ox. From their experiments they derive these conclusions. 1. Alkalies hinder glycosuria by diminishing the power of diastasic fluids to form sugar—they thus keep the blood free from excess of sugar. 2. Bicarbonate of soda acts not only on saliva, but on the pancreatic juice. 3. This action is more evident with the pancreas of omnivorous animals than with that of herbivora. Dr. Pavy had previously shown that caustic potash hindered saliva from turning starch into sugar, and that bicarbonate of soda injected into the portal vein checked the transformation of glycogen into sugar in the liver. These experiments may at least explain the temporary advantage of alkaline treatment in diabetes.

W. BATHURST WOODMAN.

M'CLELLAN ON THE CAUSES OF CHOLERA.—In the *Report on the Cholera Epidemic in the United States in 1873*, prepared under the superintendence of the Surgeon-General of the United States army, the principal part of which is by Dr. Ely M'Clellan, the causes of the epidemic are summed up as follows. 1. Asiatic cholera is an infectious disease resulting from an organic poison which, gaining an entrance into the alimentary canal, acts primarily upon and destroys the intestinal epithelium. 2. The active agents in the distribution of cholera poison are the dejections of persons suffering from the disease in any of its stages; in the dejections there exists an organic matter, which at a certain stage of decomposition is capable of reproducing the disease in the human organisation to which it has gained access. 3. Cholera dejecta coming into contact with and drying upon any objects, such as articles of clothing, bedding, or furniture, will retain indefinitely their power of infection. In this manner a sure transmissibility of the cholera infection is effected, and a distant outbreak of the disease may occur by such means at great distances from the seat of the original infection. 4. The specific poison which produces the disease known as cholera originates alone in India, and by virtue of its transmissibility through the persons of infected individuals, or in the meshes of infected fabrics, the disease is carried into all quarters of the world. Cholera has never yet appeared in the Western Hemisphere until after its route of pestilential march has been commenced in the Eastern world, and its epidemic appearance upon the North American continent has been invariably preceded by the arrival of vessels infected with cholera-sick, or laden with emigrants and their property from infected districts. 5. The respiratory and digestive organs are the avenues through which individual infection is accomplished; through the atmosphere of infected localities cholera is frequently communicated to individuals; water may become contaminated with the specific poison of cholera from the atmosphere, from surface washings, from neglected sewers, cesspools, or privies, and the use of water so infected will induce an outbreak of the disease. 6. The virulence of a cholera demonstration, the contagion having been introduced into a community, is influenced by the hygienic condition of the population, and not by any geological formation on which they may reside. 7. One attack of cholera imparts to the individual no immunity from the disease in future, but the contrary seems to be established.

DE RIDDER ON THE CURE OF NERVOUS APHONIA BY INHALATION OF CHLOROFORM.—Dr. de Ridder relates, in the *Annales de la Société Médico-chirurgicale de Liège*, a case in which chloroform inhalations gave good results. The patient was a female aged twenty-eight, of good constitution, who was affected with aphonia following a cold. This aphonia, after the disappearance of all symptoms of inflammation, resisted all means adopted for its cure. As the patient was hysterical Dr. de Ridder, thinking that the aphonia was nervous, employed without success pills of assafoetida followed by a narcotico-antispasmodic mixture. He then caused the patient to inhale the vapour of chloroform for one or two minutes every hour, not so as to produce anaesthesia, but only so as to cause slight vertigo and feeling of stunning. At the end of two days, the aphonia, having yielded gradually, had entirely disappeared. Five months later, the chloroform was employed with the same success for a recurrence of the same affection in the same subject. Lastly, a year later, the same aphonia, accompanied by a spasmodic hiccough and incessant vomiting of glairy matter, followed a violent attack of hysteria. The employment of chloroform administered in the same manner was again successful. The hiccough and vomiting yielded to the employment of 'pearls' of ether.

FABRY ON THE TREATMENT OF CHOREA.—M. Fabry relates in the *Bulletin de Thérapeutique* (quoted in *Paris Médical*, March 9, 1876) some observations carried out in the service of Dr. Perroud of Lyons, on the treatment of chorea by ether spray. This therapeutic agent, employed for the first time in 1866 by Lubetski, has given good results in Dr. Perroud's hands.

Applications of ether-spray are made along the spine by some spray-producing apparatus, such as those of Richardson or Marinier. Each application lasts from four to eight minutes. At the commencement of the treatment applications should be made three times a day; afterwards the number may be reduced to two.

Ice produces the same effect as ether-spray; a piece of ice may be passed along the length of the vertebral column for five minutes at a time.

These two means have effect by their refrigerant revulsive action on the excito-motor point of the nervous centres.

THOMAS ON THE LOCAL TREATMENT OF CHRONIC DYSENTERY.—Dr. T. Gaillard Thomas (*New York Medical Journal*, January, 1876), relates the following case. The patient was a woman who had suffered for five years from chronic dysentery, following on an acute attack, which had resisted all the known or frequently used forms of treatment. During these five years acute attacks had been frequently added to the chronic malady. The smallest number of motions daily during this period was eight, and they frequently were as many as twenty-seven or more.

When Dr. Thomas began his local treatment the patient was in a 'desperate condition' of debility.

Dr. Thomas's treatment was as follows. The patient being placed in the left lateral position, under the influence of an anæsthetic, with the aid of a long duck-bill speculum and retractor, the rectum was explored as far as the sigmoid flexure. The mucous membrane being washed, it 'was seen swollen,

œdematous, hanging in hæmorrhoidal masses, and studded with deep ulcers, with greyish bottoms. It was of a deep almost violet hue. On a subsequent occasion, all the ulcers from the anus to the sigmoid flexure were lightly touched with commercial nitric acid, by means of a piece of wet cotton, on the end of a whalebone rod. But little pain was afterwards experienced; and, similar applications being made twice more at intervals of a week, the patient was cured. Rest and milk-diet were ordered during the treatment.

Dr. Thomas thinks that there is no danger of rectal stricture from the use of nitric acid, if care be taken to avoid cauterisation sufficient to produce sloughing.

W. DOUGLAS HEMMING.

FISCHER ON THE TREATMENT OF AORTIC ANEURISM BY ELECTRO-PUNCTURE.—In the *Berliner Klinische Wochenschrift*, November 8 and 15, is the account by Dr. F. Fischer, of Heidelberg, of a case of aortic aneurism, treated in that city by Dr. Friedrich by electro-puncture, after the method of Cini-selli. The case was a very unfavourable one, with very severe neuralgic pain, dyspnœa, and dysphagia, and occasional severe epileptiform seizures. The main object of the galvano-puncture seems to have been to relieve the pain. In this it entirely failed, but the first application gave much relief to the dyspnœa and permanently relieved the dysphagia. A second application, however, was perfectly unsuccessful, and the patient died shortly afterwards of dyspnœa. The main interest of the case lies in the fact that it is, as far as Dr. Fischer knows, the first published case of electro-puncture in the treatment of aortic aneurism in Germany. Otherwise, it is entirely inconclusive. The galvanism, however, seems to have produced some slight decrease in size and pulsation and consequent amelioration of some of the symptoms, and to have done no absolute harm, and is so far encouraging as a precedent.

T. HOLMES.

TENNESON ON ASPHYXIA OCCURRING DURING THORACENTESIS.—In the *Union Médicale* for February 22, is reported a paper read by Dr. Tenneson, before the Société Médicale d'Emulation, upon the above subject. M. Tenneson relates the case of a lady, aged forty, of decided hereditary tendency to phthisis, and for many years the subject of chlorosis, who on April 2 was seized with pleurisy, resulting in moderate effusion into the right pleura. She only made an imperfect recovery, and on August 5 there was evidence of a reaccumulation of fluid. Thoracentesis was performed the next day by means of the aspirator. Between 300 and 400 grammes of serous fluid had been removed when the patient, who had been restless since the commencement of the operation, became much agitated and declared she was suffocating. The face appeared natural, however, and the pulse was unaltered; and M^{de} C., being known to be very nervous, her cries did not excite uneasiness. The liquid continued to flow, but after twenty or thirty seconds the cries of the patient suddenly ceased, her face became markedly cyanosed and covered with sweat, the eyes became fixed and dull, the extremities cold, and the respiration stopped. Simultaneously the liquid still flowing became sanguineous, and air entered the receiver in large bubbles. The cannula was promptly withdrawn; the patient was roused and stimulated, wine being administered, and fresh air admitted to the room. M. Tenneson made ready to

perform venesection, when the symptoms of asphyxia rapidly amended, and in a few minutes M^{de} C. was out of danger. Six hundred grammes had been removed. There were almost natural breathing and percussion on the right side, with no œdema, râles, nor evidence of pneumo-thorax. Only a very little fluid remained in the chest. Subsequently there was a little sero-spumous expectoration. The effusion recurred to a less degree, and then became gradually absorbed, and the patient tardily recovered. In commenting upon this case, M. Tenneson observes that, unlike the cases of M^{de} Besnier and Legroux, the cause of the symptoms threatening life here was undoubtedly sudden congestion of the lung; an afflux of blood determined by the production of a partial vacuum in the chest. M. Tenneson does not doubt that the lung had become punctured in the last stage of the operation; and he refers to the possibility of such a puncture, innocent in itself, having given rise to reflex bronchial spasm, and so to an asthmatic seizure. He thinks such an hypothesis improbable, however; whereas pulmonary congestion he regards as inevitable. The tendencies of this pulmonary congestion are in practice, however, singularly varied. Most usually it escapes observation, thoracentesis being completely inoffensive. A continued fatiguing cough is the most simple of the accidents it provokes. It may happen that the congestion, insignificant during the operation, increases in succeeding hours. M. Tenneson quotes some observations of M. Lereboullet, who attributes a slight febrile attack, with impaired percussion, resonance, and moist crepitation over one side, attended with dyspnœa and sero-spumous or sanguinolent expectoration, which may occur one, two, or three days after the operation, to this cause; such symptoms usually lasting four or five days; or an attack of congestion may proceed to more extensive œdema, and rapidly asphyxiate the patient, as in cases related by M^{de} Terillon and Lionville. Finally, as in M. Tenneson's own case above related, life may be menaced by the same cause during the operation. In both slight and severe cases, albuminous expectoration is to be observed, and sometimes appears to be a salutary symptom, serving to evacuate morbid material. More rarely hæmoptysis is observed, or hæmorrhage into the lung may result from the hyperæmia. M. Legroux has related a case in which fatal pulmonary hæmorrhage occurred shortly after thoracentesis. M. Tenneson would seek for an explanation of the varied intensity, course, and consequences of this affection, whose pathogeny he regards as uniform, in some antecedent pathological condition of the lung or of the patient himself. He thinks that pulmonary congestion is to be dreaded during or after thoracentesis in those whose lungs are the seat of tubercular disease; and he thinks that sparsely scattered granulations are more dangerous in this respect than even large centres of caseous pneumonia.

M. Tenneson would neither avoid nor postpone the operation from fear of this accident, but would perform it with greater precautions. He would dispense with the aspirator, and use a fine trocar protected by gold-beater's skin and furnished with a stop-cock, so that the flow might be arrested from time to time. In the event of asphyxial symptoms presenting themselves he would adopt the usual remedies; but if they be not speedily successful, he recommends the prompt employment of venesection.

R. DOUGLAS POWELL, M.D.

KEUSSNER ON LEUKÆMIA.—In the *Berliner Klinische Wochenschrift* for February, 1876, p. 109, Dr. Keussner reports two interesting cases of leukæmia, which came under the care of Professor Naunyn of Königsberg.

The first is that of a woman aged forty-six, who had suffered from ague at the age of sixteen, and successively from cholera, typhus, and small-pox in 1866. Since these illnesses she had been strong and healthy. On July 4 she was taken with shivering, followed by fever, violent headache, and severe pains in the legs. Later she had cough, difficult micturition, and painful swelling of the right cheek. On admission, July 17, she was well-nourished, lying low in bed and drowsy, but giving intelligent answers; she complained of the swollen cheek and of headache. The skin was hot, and of pale, rather dirty tinge. There was slight œdema of the ankles, and on the legs, especially below the knee, were numerous hæmorrhagic spots, varying in size from that of a pin's head to that of a pea. Similar spots were seen on the upper extremities and abdomen, as well as larger patches of the size of a shilling, evidently situate in the deeper layers of the integuments. She had a painful œdematous swelling of the right parotid region, and some swelling of the submaxillary gland, posterior wall of the pharynx, and soft palate, while the gums and tongue were ecchymosed and covered with sordes. The abdomen was distended, soft, and tender, especially in the hepatic region; the spleen projected beyond the edge of the ribs, and its dullness reached up to the seventh rib in the axillary line; the liver was not enlarged. The urine contained traces of albumen; the pulse was 124, the evening temperature 104.9°. On the two following days she was more drowsy, frequently delirious, and passed urine and feces under her; fresh hæmorrhages occurred, and the temperature continued high. A microscopic examination of the blood on July 20 showed an undoubted leukæmic condition: the white corpuscles were considerably increased in number, were mostly very large, and contained several nuclei; the transitional corpuscles described by Klebs, Neumann, and others were also present. The patient died on the 22nd. At the inspection, ecchymoses were found in the skin, on the surfaces of the lungs, under the visceral pericardium, in the septum cordis, and in the pelvis of each kidney. The blood in the cavities of the heart was partly fluid, partly in the form of clots which, besides being soft, were remarkable for their dirty red-brown chocolate colour. The spleen was enlarged, measuring eight inches in length, four in greatest breadth, and two in thickness at the hilus; its tissue was moderately resistant, brownish red on section, and yielded a greasy pulp; the follicles were not distinct. The kidneys were pale, the liver somewhat enlarged, with distinct lobular markings. The intestines were normal. The medulla of the ribs and humerus was converted into a greenish yellow puriform material of almost diffuent consistence, which, placed on a glass surface, diffused itself like a drop of tenacious fluid, just as has been described to be the case in leukæmia by Neumann, Ponfick, and Mosler. After a time the change of colour described by Neumann took place, the surface assuming a greyish red appearance.

The case was at first regarded as one of typhus complicated with scorbutus; but the condition of the blood and of the medulla of the bones found after death proved that it was an example of genuine

leukæmia. Its origin and course, and especially its acute development, stamp it as a peculiar variety of the disease.

Dr. Keussner's second case is that of a man, aged thirty-eight, who in the winter preceding admission suffered from pains in the left side, shortness of breath, and dry cough. In the autumn of 1874 he observed a hard tumour on the left side under the ribs, which was tender to the touch, and with each attack of pain became larger and harder. Headaches, pain in the joints, depression, and general malaise followed, and he was admitted November 2, 1874. The spleen was found enlarged, extending nearly to the anterior iliac spine; its dullness reaching above to the sixth rib in the axillary line. The liver did not project beyond the edges of the ribs; the urine deposited an abundant sediment of lithates, but contained no albumen. Microscopic examination of the blood showed a very considerable increase of the white blood-corpuscles, the proportion of which to the red corpuscles was as 1:2 or as 2:3. Transitional forms were also found. On November 4, he suffered from vomiting and painful micturition; the abdomen was excessively tender, and presented an area of dullness bounded by a horizontal line, above which the note was loudly tympanitic. Temperature, 101°; pulse, 100. These symptoms were thought to be due to peritonitis caused by rupture of an abscess in the spleen. On November 7 he died, the line of dullness having risen by that time about three finger-breadths. On inspection, the abdominal symptoms were found to be due to an enormous quantity of blood, which had been effused to the extent of several litres, behind and among the muscles of the abdomen, and was separated from the cavity of the abdomen by the parietal layer of the peritoneum. The spleen measured eleven and a half inches in length, seven in breadth, and four and a half in thickness. It was moderately firm, pale red, with small yellow points on section, and presented at its upper end a small, wedge-shaped, sharply limited, dark red mass. The tissue of the liver had an icteric tinge, and the lobular markings were distinct. The medulla of the ribs and humerus was of the same consistence as in the preceding case.

CHVOSTEK ON THROMBOSIS AND EMBOLISM OF THE ABDOMINAL AORTA.—In the *Allg. Wiener Med. Zeitung*, for January and February, Dr. Chvostek gives a detailed account of a case of thrombosis of the abdominal aorta, and adds a summary of all the similar cases he has been able to find on record.

A soldier, aged twenty-one, had suffered a few days from shortness of breath, when he was taken at ten o'clock at night, while in bed, with a violent pain in the right lower extremity, and an hour afterwards with similar pains in the left leg and in the abdomen. The pains soon ceased in the abdomen, but persisted in the lower extremities. Formication and diminished mobility were then noticed, the limbs became pale and cold as if dead, and gradually swelled. On the following morning at 10.30, the patient felt weak, and had moderate elevation of temperature. The heart's impulse was in the fourth space, præcordial dullness not increased, the first sound somewhat prolonged, and the second accentuated. Nothing abnormal was observed about the vertebral column. The abdomen was rather prominent and tense, and everywhere tender on deep pressure. Both legs were swollen from the knee downwards, and presented

a bluish or blackish-red colour from hæmorrhagic effusion, which extended from the toes on the right side to the lower third, on the left to the upper fourth of the leg. Below the left inner malleolus was a large blood-coloured blister, and smaller ones elsewhere. There were violent pains in the affected parts, when the soles of the feet were pressed upon, and the movement in the ankles and toe-joints was very slight, though the knees could be moved more freely. Both femoral arteries were distinctly smaller, and their beat feebler, than normal, and a systolic murmur was audible in each. Pulse, 76. In the evening the temperature was 103° F. On the following day the bullæ were larger, and fresh blisters and ecchymoses had appeared: the patient however felt better, sensation was improved, and the femoral pulse was stronger. During the next fortnight, the swelling diminished, the bullæ shrivelled, and the effused blood underwent the usual changes of colour, but some sloughs formed at the bases of the bullæ and the inguinal glands enlarged.

On the seventeenth day of his illness, he was only just able to walk a few steps, supported by two persons, and fresh hæmorrhages occurred in consequence. On the twentieth day, he was much emaciated, weak, and passed feces involuntarily. On this day the abdominal aorta was found somewhat wider than normal, and strongly pulsating from the epigastrium to one inch above the navel, but from that point downwards its pulsation was weaker even than that of the femorals. On the thirty-ninth day there was still some hard œdema of the lower parts of the legs and of the feet, with recent ecchymosis of the right leg; the patient was too feeble to walk, but could move the legs freely in bed; they readily became livid and swollen, if allowed to hang down. Two months from the commencement of his illness he was still unable to walk more than a few steps with the aid of crutches. The legs were wasted, brown in colour, somewhat infiltrated at the lower parts, and presenting pigmented scars resulting from the sloughing above mentioned. No pulsation could be felt in the aorta below a point one inch above the navel. On examining the spine, the second and third lumbar vertebræ were found projecting backwards, and their spinous and transverse processes apparently much enlarged, so as to give to these vertebræ a width of five inches, and much resemblance to a tumour.

The author, in discussing the case, points to the absence of pulsation in the lower part of the aorta, as indicating complete obstruction, or extreme contraction of the canal of that vessel. In favour of the view that it was not completely obstructed, it is to be observed that even after 2½ months there was no collateral circulation, that ten hours after the occurrence of the symptoms there was pulsation, though very faint, in the femoral arteries, and lastly, that only a very small extent of the surface was affected with gangrene. The suddenness of the symptoms points to embolism; and though the two limbs were not affected at precisely the same moment, it is improbable that the two iliacs were separately blocked, since, according to experience, embola reaching the iliac arteries usually obstruct them completely, and lead to more or less extensive sloughing. The origin of the embolon was at first assumed to be cardiac, but after the discovery of the condition of the lumbar vertebræ, it appeared likely that their enlargement, probably malignant, had led to disease of the aorta, and consequent thrombosis, and that then the thrombus, which had formed slowly, and without

symptoms, was detached, and thus produced embolism at the point of bifurcation of the vessel.

Chvostek divides the recorded cases of embolism and thrombosis of the aorta into four groups, in each of which only a few cases are to be found—(1) Embolism of the orifice of the aorta (Cohn, Reid); (2) Thrombosis in the course of the vessel (Trost, Buhl, Tewat, Carville); (3) Thrombosis of the lowest portion (Psillander, Lallemand, Duncan); and (4) Embolism at the bifurcation (Hjelt, Tutschek, six cases collected by Lebert, and others by François, Virchow, etc.). The five cases of embolism analysed by the author resulted from the formation of clot in the left side of the heart, mostly in the ventricle, from perforating carcinoma, or abscess, or dilatation of the cavity. Thrombosis was caused by atheroma of the vessel in four cases, and by the pressure of carcinoma of the stomach in a fifth.

The symptoms of embolism of the abdominal aorta are the following. Immediately after the obstruction there are violent neuralgic pains in the lower extremities and hypogastric region, which persist usually for some time. There may be at first hyperæsthesia, but generally formication, paræsthesia, and often complete anæsthesia successively appear. The arteries of the lower extremities are pulseless and the limbs cold, or there may be a feeble and retarded pulse in cases of less complete obstruction or where a collateral circulation has been established. More or less paralysis soon occurs, but mostly the anæsthesia is more marked than the motor paralysis. In proportion to the completeness of the obstruction and the absence of a collateral circulation, there is more or less extensive gangrene, beginning usually at the toes and rapidly extending upwards; while œdema and sphacelus may occur as the result of compression or thrombosis of the vena cava or iliac veins. These symptoms are soon followed by general reaction; fever, sometimes with rigors, sleeplessness, emaciation, and finally delirium, collapse and coma. The cases are mostly fatal sooner or later, but cases of more or less complete recovery with the establishment of a collateral circulation are recorded by Duchek, Power, and Gull. Treatment is almost powerless, but perfect rest is enjoined, and violent local reaction may be combated by the application of cold, or abstraction of blood from the part.

F. TAYLOR, M.D.

QUINCKE ON CHYLOUS OR FATTY EFFUSIONS IN THE PLEURA OR PERITONEUM. — Professor Quincke has published (*Deutsches Archiv für Klin. Med.* vol. xiii.) three cases of effusion into the cavity of the pleura and peritoneum. These are interesting from the nature of the fluid effused, which was so rich in fatty matters as to assume quite a milky appearance.

His first case was that of a man, aged fifty, admitted into hospital for pleural effusion on the right side, consecutive on a lesion caused by the passage of a cab over his body. The fluid withdrawn by puncture on two occasions, and that shortly afterwards found on *post mortem* examination, presented the characteristics of milk or chyle, as it may be observed in animals. Microscopic examination revealed the presence of numerous minute fat-globules, and chemical analysis showed fatty matters slightly in excess of 0.01 per cent. The character of the effusion necessitated the supposition that some large lymphatic vessel, or the thoracic duct, had been

ruptured; but the *post mortem* examination did not actually establish this very plausible theory.

In a second case, a fluid similar to the preceding, but much richer in fatty matter (1.68 per cent.), was evacuated by puncture from a dropsical effusion. The cause of this extravasation of chyle must probably be looked for in the resistance offered by numerous old-standing peritoneal adhesions to the passage of this fluid through a certain number of the minute chyliferous vessels, and to consequent rupture of the capillaries, the whole network of which was enormously dilated.

Examples similar to the above are rare. Dr. Quincke cites ten from various authors. In three of the cases the effusions were pleural; in the other seven the milk-like fluid had collected in the peritoneal cavity. In a small number of the necropsies rupture of the thoracic duct, or of a large lymphatic vessel, could be verified; in others only compression and dilatation were found.

Under this head of adipose or fatty dropsy a third case is reported, in which the presence of a milk-like ascitic fluid is mentioned; but here the fatty matter, instead of being in a state of emulsion, was in the form of true granular masses, which were clearly the results of degeneration in an old-standing peritoneal cancer. Analogous cases have been placed on record by Friedreich, by Klebs (*Handb. der Path. Anat.*, p. 322), and by Lucke (*Virchow's Archiv*, 1869). Professor Quincke's case is interesting from another point of view, viz. the development of a cancerous nodule in the subcutaneous cellular tissue, at the spot where puncture had been made to evacuate the dropsical fluid.

LITTON FORBES, M.D.

BROCA ON CYSTICERCUS COEXISTING WITH TÆNIA.—At a recent meeting of the *Société de Chirurgie*, as reported in *La France Médicale* for February 23, M. Broca communicated a remarkable case of multiple cysticercus occupying the muscles and viscera, and probably also the nervous centres, the 'host' being at the same time infested by an armed tapeworm (*tania solium*). The patient, a coachman, aged twenty-seven, four years ago passed some joints of tænia, and after a while he lost consciousness and fell from his horse. This was a severe attack, which was twice renewed some months subsequently. Seven months ago he perceived the development of a small tumour on his chest, and soon afterwards a large number of similar growths appeared all over the surface of his body. He was placed under M. Broca's care for these tumours, none of which, however, appeared either upon or within the muscular substance of the tongue. These tumours, measuring from 0.4 to 0.6 inch long and 0.24 inch broad, were elliptical, indolent, situated between the superficial layers of the muscles, and had their long diameter directed towards the axis of the fibres. During his stay in the hospital, the patient passed several segments of *tania solium*. He had another attack, with loss of consciousness, but without epileptiform seizures. The left eye also underwent a slight alteration of vision, but no important lesion of the retina was observed. From the patient's statement, and from the nature of the growths, M. Broca easily made a diagnosis, which was confirmed by microscopic examination of one of the enucleated tumours. The treatment consisted in tapping all the tumours with a fine cataract-needle. M. Broca thus performed nearly 400 of these tapplings, which

resulted in the slow disappearance of the tumours in about a month. The final transformation of the cysticercus thus tapped is that to which M. Lancereaux has given the name of barley-grain conversion. When the fingers are passed over the muscles where the cysticerci have been treated by tapping, the sensation of grains of barley is thus communicated. The report states that this is the first case in which the co-existence of tapeworm and cysticerci has been observed in the human subject.

T. S. COBBOLD, M.D.

FLINT ON PNEUMOTHORAX.—Dr. Austin Flint, sen., in Seguin's series of American *Clinical Lectures*, discusses the various conditions which may give rise to pneumothorax, and concludes that, excluding the rare instances of causation by a hydatid cyst situated in the lung bursting into the pleura, and the rupture of that membrane by blood extravasated beneath it, it is dependent on four conditions.

1. Empyema. Pus accumulating in the pleura will sooner or later make its way either through the walls of the chest or the lung, and sometimes in both directions. Perforation of the lung is generally denoted by sudden expectoration of pus, and in some cases the quantity is such as to destroy life suddenly by suffocation. In one case of Dr. Flint's complete evacuation of the pleura took place, and recovery occurred; but, as a rule, if expectoration be alone relied on for the removal of the pus, the patient sinks from prolonged emaciation and exhaustion. Two instructive instances of empyema are given, of empyema causing pneumothorax, and of the great advantages of free incisions and carbolic acid injections. In both, great gain of weight followed.

2. Pneumothorax from interstitial empyema. Of this rare form, Dr. Flint gives an interesting instance in a pedlar, aged twenty-nine, who was seized while carrying his pack with sharp pain in the side, which disappeared, but was followed by marked dyspnoea, precluding all active exercise. The left chest was dilated and tympanitic, and the heart dislocated to the right of the sternum. Amphoric sounds and metallic tinkling were audible, and vesicular murmur was absent. There was no evidence of fluid. In less than a month all signs of pneumothorax had disappeared, the heart returned to its normal position, and the vesicular murmur was everywhere audible. The patient, on resuming his occupation, had a return of the symptoms, which disappeared as before; and eleven months later he was reported as being quite well, but as having relinquished his old profession.

3. Pneumothorax in circumscribed gangrene of the lung. Here the gangrenous mass is situated near the superficies of the lung, and, being devoid of pleuritic adhesions, sloughs off into the cavity of the pleura—an exceedingly rare form of the disease.

4. Pneumothorax in phthisis. Dr. Flint states that in his 700 tabulated cases of consumption pneumothorax occurred in 24, or $3\frac{1}{2}$ per cent., and that the perforation was always followed by effusion, occasionally purulent, and often becoming foetid. Effusion was often so rapid as to fill the chest and expel the accumulated air, to compress the lung into a solid mass, and to convert the case into what was apparently one of pleurisy or empyema.

Allusion is made to the danger of sudden removal of the fluid in these cases, as the perforation may

re-open, or rather cavities may burst into the pleura, through the too rapid expansion of the lung. If the aspirator be employed, there is some danger of the lung being wounded by the needle. The author advocates, in such cases, the removal of enough fluid to relieve the dyspnoea, leaving sufficient to secure the possible advantage of compression. In all cases of pneumothorax where the dyspnoea is great, he recommends a free opening into the chest, as is done in empyema; and two instances are cited where great relief followed, the patients nevertheless dying in eleven and twelve days respectively after the operation. The author thinks that, where the tubercular disease is limited and the pneumothorax caused by the bursting of a small abscess into the pleura, free incision might prove a curative measure. The duration of life after the occurrence of pneumothorax varies, but ten months was the longest period reached by any of Dr. Flint's twenty-four cases, after perforation had taken place. In circumscribed pneumothorax, on the other hand, where the effusion of air is limited by adhesions, a more hopeful prognosis can be given, and an instance of complete recovery is recorded.

C. THEODORE WILLIAMS, M.D.

RECENT PAPERS.

- On Morbillous Laryngitis—Pseudo-Secondary Membranous Laryngitis. By M. Cadet de Gassicourt. (*La France Médicale*, April 12.)
- On Nodular Rheumatism in Children. By Dr. Stoiesco. (*Le Progrès Médical*, April 15.)
- A Case of Melanosis. By M. Audibert. (*Lyon Médical*, April 16.)
- Aortic Insufficiency coincident with a considerable Cachectic Condition, probably due to Cancer of the Kidney. By M. G. Marseille. (*Gazette des Hôpitaux*, May 2.)
- On Some Rare Forms of Affection of the Spinal Cord. By Dr. A. Seeligmüller. (*Deutsche Medicinische Wochenschrift*, April 22 and 29.)
- On Dyspeptic Asthma. By Dr. Henoch. (*Berliner Klinische Wochenschrift*, May 1.)
- A Case of Caseous Nephritis; with Remarks. By Dr. Purjesz, Jun. (*Ibid.*)
- Radical Treatment of Empyema. By Dr. Pestavy. (*Ibid.* May 8.)
- The Diagnosis of the Greatest Diameter of Cavities in the Lungs. By C. Gerhardt. (*Verhandlungen des Physikal.-Medicin. Gesellschaft in Würzburg*, Band ix. 1875.)
- Cases of Pneumonia treated during 1874 and 1875. By Dr. Burresi. (*Lo Sperimentale*, April.)
- On a Case of Croup secondary to Diphtheria, treated successfully by Inhalations of Lactic Acid. By Dr. D. Torsellini. (*Ibid.*)
- Diphtheria: Typical Cases, in illustration of its Diagnosis, Prognosis, and Treatment; with Remarks on the Signification of Albuminuria in that Disease. By Sir J. R. Cormack, M.D. (*Edinburgh Medical Journal*, March, April, May.)
- On Rheumatoid Arthritis: its Diagnosis, Pathology, and Treatment. By Dr. G. W. Balfour. (*Ibid.*, April.)
- On the Treatment of a Severe Form of the so-called 'Paludal Fever,' with Icterus and Renal Hæmorrhage. By Dr. J. Labonté. (*Ibid.*, May.)
- A Case of Pleuritic Effusion cured by Antiseptic Treatment. By Dr. A. Marshall. (*Ibid.*)
- Headaches from Eye-Strain. By Dr. Weir Mitchell. (*American Journal of Medical Sciences*, April.)
- Biliary Colic, with Cases. By Dr. Hayden. (*Dublin Journal of Medical Science*, April.)
- A Case of Intestinal Obstruction in which the Abdomen was several times Punctured. By Dr. Foot. (*Ibid.*)

SURGERY.

GUSSENBAUER ON ŒSOPHAGOTOMY.—Dr. Carl Gussenbauer of Vienna reports (*Deutsche Medicinische Wochenschrift*, no. 2, 1876) a case from the hospital practice of Professor Billroth, in which, after the retraction of a large foreign body from the gullet by œsophagotomy, the patient quickly succumbed in consequence of acute softening of tubercle previously diffused throughout both lungs. This case presents many points of interest. The patient, previously in bad health, had allowed a large clasp-knife, half-opened so that the blade was at right angles to the handle, to pass into his pharynx. This large foreign body subsequently slipped down into the gullet, without causing any severe lesion to the surrounding structures. There were great difficulties attending the operation for the extraction of the knife, and the treatment of the large wound in the neck was complicated in consequence of certain symptoms due to the rapid softening of the pulmonary tubercle, the differential diagnosis of which condition was not very easy. The subject of the case was a consumptive man, thirty-four years of age, who on the morning of May 26, 1875, whilst scraping his tongue with a large pocket-knife, allowed this instrument, as he stated, to pass to the back of the mouth and into the throat during a sudden and severe attack of coughing. Attempts were made by the patient himself and afterwards by a medical man to extract this body, but without success. In the evening the patient was seen by Professor Bryk, of Cracow, who could feel on the front surface of the neck a hard and firmly impacted body just below the hyoid bone, and could with his index finger passed by the mouth touch the blade of the knife, which crossed from the anterior to the posterior walls of the pharynx on the left side, with its edge directed downwards. The lower portion of the neck was slightly swollen; the submaxillary region was not swollen. Respiration was not disturbed; the patient's voice was a little more rough than usual. Deglutition was not much impaired and the patient could drink off water from a large glass, not all at once, but still without feeling pain and without any apparent difficulty. Dr. Bryk made several forcible attempts to remove the knife by the mouth, but did not succeed. He then endeavoured to attain his object by performing subhyoid pharyngotomy, but in the course of the operation the knife suddenly passed down into the œsophagus, probably through reflex contractions of the pharyngeal muscles, which during the operative proceedings were very strong.

On the following day the patient travelled to Vienna, and put himself under the care of Dr. Billroth. The neck was then much distended through emphysema, and the skin congested. Œsophagotomy was performed at once. The operation was attended with much difficulty, and the knife could not be extracted until after extensive incision of the gullet. It was found to be placed obliquely in the canal, with the angle formed by the blade and handle directed upwards and to the right side, the blade obliquely to the left side, and the handle downwards and to the right side. The confined space, the assumed ignorance of the patient as to the size and position of the knife, and the necessary precautions taken to avoid wounding any of the large cervical vessels, caused the operation to be a long and difficult one. The patient felt much relieved after the extraction of the knife, and

M. BERTHELOT, the well-known French chemist, has been appointed Inspector of Public Instruction, in place of M. Balard.

insisted on leaving the hospital. He was re-admitted three days later, as he was very feverish, and the wounds on the neck were much inflamed. The fever persisted, and on June 2 commenced a profuse expectoration and discharge through the cervical wound of pus from the lungs. The patient died on June 6, ten days after the operation. At the necropsy there was found to be extensive infiltration of both lungs. In the upper lobe of the left lung were three large cavities filled with semi-fluid degenerated tubercle. This left upper lobe also presented signs of lobular pneumonia and gangrene. Both lungs presented all the *post mortem* phenomena of suppurative bronchitis.

Dr. Gussenbauer directs attention to two points of special interest which were observed in the progress of this case after the operation, one point relating to deglutition, the other to expectoration. Notwithstanding a very long incision through the coats of the œsophagus, and a considerable loss of substance of these coats due to gangrene, caused probably by the pressure of the handle of the knife, so that there was a large open wound passing directly into the pharynx and œsophagus, deglutition was but slightly impaired. The patient, when the wound had been plugged, could pass fluid in large quantities into the stomach, and did not complain of uneasiness in the neck when he drank off, as he frequently did, a whole glassful of milk. This clinical fact proves, as Dr. Gussenbauer points out, that the gullet plays in deglutition scarcely more than the part of an extensible tube, and that the œsophageal muscles have but very subordinate importance in the functions of nutrition. On the sixth day after the operation there was an intermittent discharge from the wound of fetid pus, concerning the source of which there were several suppositions. The simplest explanation was that of expectoration from the lung, due to advanced phthisis, as it could be clearly made out by percussion and auscultation that there were in the left lung cavities sufficiently large to supply a large quantity of purulent fluid. The fact, however, that at each discharge a large quantity of pus was poured out in a gush, and without coughing, led to the supposition that this pus came not from the lungs, but from a large cervical abscess communicating with the air-passages by means of an orifice caused indirectly by the pressure of the handle of the knife. This view was proved by the result of the necropsy to have been wrong. No perforation either of the larynx or trachea had taken place, and there was no collection of pus either in the neck or in the anterior mediastinum. This case has further interest, in showing with how much rapidity acute suppuration and sloughing of lung-tissue infiltrated with tubercle may follow a severe surgical operation.

W. JOHNSON SMITH.

SHAPLEIGH AND HAMILTON ON SOME PECULIAR CASES OF DISLOCATED HUMERUS.—In the discussion on a paper on the mechanism of the shoulder joint, read by Dr. Allis before the Philadelphia County Medical Society (*Philadelphia Medical Times*, December 11, 1875), the following case was related by Dr. E. B. Shapleigh. Being called to attend an old lady with her shoulder out of joint, he discovered that there was an axillary dislocation, with the head of the humerus resting upon the ribs, but that the glenoid cavity was filled with a mass which prevented reduction by the ordinary methods. This was found to be a large fatty tumour, which,

from its former position immediately behind the axilla, had slipped forward, and now occupied the place where he wished to put the head of the humerus. The assistance of Dr. J. W. Millick was fortunately obtained, who made strong traction upon the arm in a direction upward and outward, while Dr. Shapleigh forced the tumour backward, thus giving the bone an opportunity of slipping into place, and the reduction was readily accomplished.

Dr. G. Hamilton mentioned two cases of dislocation at the shoulder of rather exceptional features. A large and muscular gentleman fell headlong from top to bottom of a long, straight, and rather steep stairway, with such force as to drive the head of the humerus to a great distance from the articulation into the axilla. After several efforts, the bone was restored, audibly and sensibly, to its natural position, by means of the heel in the axilla, and the aid, in traction, of two men. The elbow, however, could not be brought within a considerable distance of the body. This fact, in connection with a most inordinate tumefaction of the shoulder, occurring in a very few minutes after the fall, induced Dr. Hamilton to call in Dr. G. W. Norris, who desired that his colleague, Dr. E. Peace, should see the patient. The consultation resulted in the conclusion that the head of the bone was prevented from coming into perfect contact with the glenoid cavity by some portion of muscular or other fibre, and that unusual extravasation of blood, from great laceration, was the cause of the extraordinary tumefaction. The ensuing discoloration of the integument involved the shoulder, the arm, and ulnar surface of the fore-arm to the fingers, the side of the body down to the ilium, and extended across the back to the opposite side. It did not disappear for many weeks. No permanent inconvenience in using the arm ensued.

In the second case the reduction was effected, as in the former, by placing a heel in the axilla. The patient, after reposing on the floor for about half an hour, in order to recover from the sickness and exhaustion of venesection and tartar-emetic, rendered necessary from previous fruitless efforts at reduction, was raised upon his seat, when it was at once manifest that the head of the humerus did not occupy the glenoid cavity. The arm was then placed in a sling, and the father of the young man directed to take him to the Pennsylvania Hospital in a day or two, if there were inability to use the limb. This, however, did not occur; and though not thought of at the moment, the fatigue of the muscles, from protracted efforts at reduction, and more especially the prostration of vital force from loss of blood and from the use of tartar-emetic, were, doubtless, the efficient agents in permitting the mere weight of the arm to drag the head of the bone temporarily from the glenoid surface of the scapula.

BUCHANAN ON DEPOSITION OF THE OVA OF THE FLY IN THE NASAL FOSSÆ.—Dr. W. F. Buchanan, captain and assistant-surgeon, U.S.A., relates (*Philadelphia Medical Times*, October 30) that on September 14 he was sent for to visit a Mexican woman, aged about eighty. Her son stated that two nights previously a fly had got into her nose whilst she was sleeping, and that she had now worms in her nose. She complained of pain in the nostrils, forehead, and throat, difficulty of swallowing; there was some tumefaction of the eyelids. The pulse was about 100, the bowels constipated. Her nose had been bleeding considerably, and there was a constant

sero-sanguinolent discharge. No worms could be seen; and, although her son said that he had seen them up her nose, it was thought that the symptoms might be due to other causes. A purgative of sulphate of magnesia and calcined magnesia was ordered, a small blister applied over each maxillary sinus, and a mixture of sulphate of zinc, acetate of lead, and tincture of opium injected into the nostrils. Next day, two grains of quinine were given every three hours. On September 16 the symptoms were still severe. Several maggots had appeared at the anterior nares, and one or two had been removed. The quinine was continued, sweet spirit of nitre was given, and an injection in the nares of diluted liquor sodæ chlorinatæ ordered to be used frequently. On September 17 a small orifice was noticed in the soft palate in the median line, at its junction with the hard palate, through which one or two maggots were protruding; these were removed. Twelve or fifteen had been discharged since the previous visit. Injection through this orifice and the anterior nares, etc., was continued. On the 18th the patient's suffering was great, with both moral and physical pain and continuance of occasional delirium; the opening in the soft palate was enlarged. An opening had now been caused by the maggots on the bridge of the nose at the junction of the cartilage with the nasal bone, through which, and the opening in the soft palate, about twenty-five maggots had been discharged since the previous day. The medicines were continued. A thorough injection was made through the orifices in the nose and the soft palate, and through the anterior nares, of a solution of ʒjss of carbolic acid in ʒvj of water, followed by the use of sweet oil, with directions to continue the use, in the interim of the visits, of the liquor sodæ chlorinatæ. On the 19th the patient was somewhat improved. Two hundred and twenty maggots had been discharged since the previous day. Most of them were of the size of a small goose-quill, and from five to eight lines in length. From this time the patient rapidly recovered, twenty to thirty maggots being discharged each day for a few days, when they ceased. A portion of the anterior part of the soft palate sloughed out, but, at the time of the report, appeared to be closing, as also did the orifice on the bridge of the nose. The swelling of the eyelids, pains in the head, face, and neck, difficulty of deglutition, etc., all gradually subsided until recovery. There were in all about three hundred and twenty-five maggots discharged.

HEWSON ON BONWILL'S METHOD OF INDUCING ANÆSTHESIA.—The following is an extract from an introductory clinical lecture delivered at the Pennsylvania Hospital by Dr. Addinell Hewson, and reported (with further notes) by Dr. T. H. Bradford in the *Philadelphia Medical Times* for March 4.

The use of ether, chloroform, and the like, has disarmed surgery of the greatest of its terrors; but such measures are not to be resorted to in the embarrassments to which I am now referring. What we want here are measures to diminish emotional dread, and to allay or diminish the sensitiveness of a part, so that patients can be handled or examined with as much force as may be necessary to detect all the phenomena in their cases. In the most serious cases for manipulative examinations or procedures we have not heretofore hesitated to use ether and chloroform, but even in many of them we should feel that we were yet in want of the *desideratum*,—

some means to be used readily without rest, inconvenience, or annoyance. This, I believe, I have really to show you here to-day, in Dr. W. G. A. Bonwill's method of diminishing or allaying sensibility by rapid respirations.

You have all of you, I have no doubt, experienced the effects of rapid and deep respirations after violent running, or of blowing hard to ignite a fire—especially the confusion of sight and bewilderment of mind. These Dr. Bonwill recognised many years ago, associated with numbness of sentient nerves, as dependent on the rapidity of the respirations. Pursuing the subject, he has brought it to practical use in his profession—that of dentistry—in which he uses it constantly to diminish the sensitiveness of dentine, and even to produce such insensibility as to allow of the extraction of a molar tooth without pain. Of the latter I have had a demonstration in my own family, which has led me to the study of the subject myself, and this with the most gratifying results. I have used it in stitching wounds, in handling oversensitive parts, and in probings and the like. The surgeon's probe, the earliest of his aids in exploring his cases, is an object of special dread to his patients, and so constantly is it resorted to that even well-informed people forget or are ignorant of its purpose.

The solid metallic character of this instrument elicits, when its end is brought into contact with a hard substance, peculiar sensations, which, to an educated touch, will designate with great accuracy the character of such a substance, and its relations with the parts where it is concealed. The phenomena as regards the latter point will be very much intensified by using in addition the 'sounding-board,' devised, as you know, for increasing the value of the sounding in exploring the bladder.

The slightest contact of the probe held by this sounding-board will not only show you that the substance it is touching is hard and is free or firmly fixed, but will also give you a clear idea of the amount of its hardness, and even of its size. This, as you see, I can demonstrate to the whole of this large class by touching various articles on the table before me with the instrument so guarded. Now, I wish to make some actual demonstrations of the kind on two boys who have been sufferers for a long time with diseased bone. In both these cases I had a most gratifying demonstration of Dr. Bonwill's method a few days ago, when I first came to examine them with the probe. The first case is a bright little fellow, who looks at me very cheerfully to-day, and in this respect is very different from what he was at the beginning of our interview some days ago: he then dreaded the probing. He is a boy who has gone through a good deal of suffering. You will remember his having been before in the clinic on more than one occasion. He was admitted on January 12. A year ago he fractured his tibia in its shaft and at his malleolus, by falling downstairs. He was treated for the injuries, but in about six months an abscess formed, which was lanced. It was then found that there was extensive periostitis. The limb, after this, was constantly breaking out, and giving the child great annoyance.

On admission, the patient looked well, was well nourished; the right leg was much swollen, and red, with two fistulous tracks leading to diseased bone, and from which exuded a whitish, semi-purulent discharge. The leg was poulticed, and the patient ordered half a drachm of cod liver oil with

lacto-phosphate of lime three times a day. On January 15 he was brought before the class, and, after he was thoroughly etherised, Dr. Morton made a free incision about three inches in length down to the bone, which he found in a necrotic condition. He removed a considerable portion of this by a chisel. He then used a trephine, and bored through to the medullary canal, where he found two spicula of dead bone, which had apparently been the whole cause of the trouble. He removed these and all the rest of dead bone that was free. The wound was filled with charpie saturated with carbolised oil, and bandaged from the toes up. This same kind of dressing has been continued, with very satisfactory results. The wound is filled with healthy granulations; but there is a fistulous opening high up near the knee, and some distance from the wound, evidently communicating with dead bone. This I explored the other day with the simple probe while the patient was breathing with great rapidity, and I detected a small and free piece of dead bone, without causing him any pain. To-day I will make the exploration under the same circumstances, with a probe armed with a sounding-board.

The patient, being on the operating-table, was directed by Dr. Hewson, who was holding the board and probe in his hand, to breathe rapidly. He did so for only a few seconds, and then ceased, and directed his eyes to the instrument. He was told he was not going to be hurt.

He would not, however, continue deep inspirations anything like long enough (Dr. Hewson stated that it required fully three minutes, according to his experience). The boy then grew nervous, and began to cry, refusing to breathe at all with any exertion. The doctor then left him on the table and turned to the other case.

This was a lad sixteen years old, who had been admitted on January 25, for necrosis of the foot. Three years since, he was trampled upon by a horse, injuring the left foot. With attention and rest he soon regained the use of this foot. But three months ago the same kind of accident befell the same foot, doing it a great deal of damage. It is now much swollen, with numerous sinuses, abundant discharge, and great sensitiveness.

The probing at the time of his admission was very painful. When Dr. Hewson examined him on the 3rd instant with the probe, after he had been breathing rapidly for about five minutes, he did not evince any pain whatever. He was therefore thought to be likewise a good subject for demonstration to-day. He could not, however, be induced to breathe as was necessary.

The want of success in these two cases was evidently due to great emotional excitement, possibly from dread of the introduction of the sounding-board. The first boy had special dread of being etherised. The writer of this report then volunteered to try the process before the class. It was his first attempt, and was made sitting erect, with his right hand resting upon a table. Breathing rapidly (for about three minutes) was attended first with a tingling sensation of the surface, especially of the fingers, and a feeling as though the surface was all swelling. Then there followed a dizziness or confusion in the head, with consciousness well preserved, but with a feeling of inability to resist or act in an independent way. He remembered well being frequently asked by the doctor if he was hurting him, but had no recollection afterwards of the pin sticking him, much less of

its having been firmly imbedded in his flesh, as he found it when he had ceased the rapid respirations and the anæsthetic effect had passed off.

Some cases of interest, as showing important points in diagnosis, were after this brought before the class, and the rest of the hour was occupied in their discussion. After dismissing the class, Dr. Hewson went with the writer to the receiving ward, where they found waiting a boy who had fallen upon the ice an hour previously and had sustained a severe injury to his left wrist. He was evidently suffering, and in great dread of being hurt, and the doctor directed him at once to try the rapid respirations. This, in two minutes and a half by the watch, showed some dizziness in the boy's head—when the doctor picked up the limb and moved it about with the utmost freedom, diagnosing a bad sprain of the wrist, and the absence of fracture. When the boy was recovering he took to crying, on account, he said, of the dizziness and confusion he had experienced. He said positively he was not suffering any pain, the limb having been put in the easiest position possible.

RECENT PAPERS.

- Clinical Lectures on Fractures of the Leg, complicated by Wounds. By Dr. Gross. (*Revue Médicale de l'Est*, April 1.)
- Cases of Fractures. By Dr. Bertin. (*L'Union Médicale*, April 13.)
- On Neuralgia of Stumps. By M. Trélat. (*Le Progrès Médical*, April 8.)
- On a Paretic Condition Consecutive on Empyema. By M. Lepine. (*Gazette des Hôpitaux*, April 1.)
- Cure of Vesico-Vaginal Fistula by the American Plan. By Dr. Henri van Cleemputte, and Adolphe de Cock. (*Annales de la Société de Médecine de Gand*.)
- On a Case of Voluminous Strangulated Hernia reduced by the American Method. By Dr. Bonnemaïson. (*Bulletin Général de Thérapeutique*, April 30, 1876.)
- Three New Cases of Trephining the Cranium. By Dr. Jules Bœckel. (*Gazette Médicale de Strasbourg*, May 1.)
- On a Rare Variety of Fracture of the Upper Extremity of the Tibia. By M. J. Duplay. (*Le Progrès Médical*, April 29.)
- On Lister's Treatment of Wounds. By Dr. Weinlechner. (*Wiener Medizinische Wochenschrift*, April 1, 8, 15, 22.)
- Congenital Hydronephrosis of the Right Side; successfully treated by Puncture and Injection of Iodine. By Dr. Woelffler. (*Ibid.* April 8 and 15.)
- On Death after Severe and Extensive Burns. By Dr. Ponfick. (*Berliner Klinische Wochenschrift*, April 24.)
- Œsophageal Fistula and Secondary Mediastinal Abscess. By Dr. Lürman. (*Ibid.* May 8.)
- On the Employment of Carbolie Acid in Operations on Diabetic Patients. By Dr. H. Fischer. (*Deutsche Medicinische Wochenschrift*, April 8.)
- Critical Examination of the Methods of Treating Wounds. By Dr. A. Weichselbaum. (*Allgemeine Wiener Medizinische Zeitung*, March 14, 21, 28, April 4, 11.)
- On Transfusion of Blood. By Drs. G. B. Manzini and R. Rodolfi. (*Gazzetta Medica Italiana-Lombardia*, April 1, 8, 15, 22.)
- Case of Popliteal Aneurism treated by Digital Pressure. By Dr. R. W. Hutcheson. (*New York Medical Record*, April 22.)
- On Excision of Isolated Bones of the Tarsus, preserving an Useful Foot. By Dr. G. Buchanan. (*Edinburgh Medical Journal*, April.)
- Case of Lymphatic Inflammation simulating Venereal Disease. By Mr. F. Cadell. (*Ibid.*, May.)
- Ligations of Large Arteries at the Pennsylvania Hospital between the years 1868 and 1876. By Dr. Thomas G. Morton. (*American Journal of Medical Sciences*, April.)
- On the Modification of the Anæsthetic Process by Hypodermic Injection of Narcotics. By Dr. J. C. Reeve. (*Ibid.*)
- On the Surgical Anatomy of the Tibio-Tarsal Articulation, with Special Regard to Amputations at this Joint. By Dr. John A. Wyeth, M.D. (*Ibid.*)
- Concussion of the Brain, with Cases illustrative of Different

- Degrees of Severity. By Surgeon and Brevet-Colonel B. J. D. Irwin. (*Ibid.*)
- A Rare Form of Cancer of the Penis; External Perineal Urethrotomy. By Dr. Robert F. Weir. (*Ibid.*)
- On the Use of Nélaton's Catheter in Stricture of the Urethra, enlarged Prostate, etc. By Dr. T. C. Wallace. (*Ibid.*)
- Encephaloid Disease of the Right Humerus in the course of the Brachial Artery, and simulating Aneurism; Amputation at the Shoulder-Joint; Recovery. By Dr. William A. Gott. (*Ibid.*)
- On Stricture as the Initial Cause of Gleet, with Remarks on the Urethral Calibre. By Dr. F. N. Otis. (*New York Medical Journal*, April.)
- The Proper Construction, Care, and Uses of the Galvano-Cautery Apparatus. By Dr. H. G. Piffard. (*Ibid.*)
- On the Normal Urethra and its Constrictions in Relation to Strictures of Large Calibre. By Dr. R. F. Weir. (*Ibid.*)

SYPHILOGRAPHY.

DUBUC ON A RARE FORM OF SYPHILITIC INITIAL LESION.—Dr. Dubuc describes a primary syphilitic sore resembling herpes (*Annals de Dermatologie*, 1874), which has not, he thinks, hitherto been recognised as an occasional commencing form of constitutional syphilis. In the six cases adduced, the affection began as minute numerous erosions scattered over the glans, furrow, and inner surface of the prepuce, closely resembling those which are left when the vesicles of true herpes burst. They were, however, not seated on a red itching area, and, after a shorter or longer period, hardened and left, where each ulcer existed, a small elevated hard cicatrix, that in time faded away, and all trace vanished. Constitutional syphilis of a severe kind followed this affection in all cases. BERKELEY HILL.

CASPARY ON HEALTHY MOTHERS OF CHILDREN WHO HAVE CONGENITAL SYPHILIS.—As bearing on the solution of this question, Caspary (*Vierteljahresschrift für Dermatologie und Syphilis*, 1875, 4 Heft) gives the following case. The husband was infected with syphilis in 1872, and whilst he was treated by mercury, and for some time afterwards, great care was taken to protect the wife from contagion. In October, 1874, the wife became pregnant, and in March a macerated three-months' embryo was discharged. Professor Neumann believed that he found gummata in the maternal placenta. The woman made a good recovery. Her previous children had been healthy; and from the time of the husband's infection until the abortion she had been carefully watched by the author, and no symptoms of syphilis were found. He now inoculated her on the arm with the secretion of a syphilitic condyloma mixed with blood. The result was negative, and the woman was subjected to an inunction cure.

MONTI ON THE TREATMENT OF CONGENITAL SYPHILIS WITH FERRUM IODATUM SACCHARATUM.—Dr. Monti (*Fahrbuch für Kinderheilkunde*, Band ix. Heft 3) begins by observing that the treatment of congenital syphilis with any form of mercury has the disadvantages, that it increases the anæmia and exercises scarcely any influence upon relapses and sequelæ. Ferrum iodatum saccharatum was employed in the form of powder dissolved in milk, and given at feeding times. Its administration was continued until the affections of the skin and mucous membrane, the enlargement of the spleen,

and the accompanying anæmia, had all disappeared. The author arrives at the following conclusions. Children of all ages bear the drug well, and are rendered more tranquil by it. The disease products undergo retrograde metamorphosis. The duration of the disease is not so short as under mercurial treatment; in twenty cases it ranged from ten to sixty days, the average being twenty-two. The action of the drug is not sufficiently rapid to meet cases which require prompt interference, but in others it has the great advantage that the nutrition of the child steadily improves. Relapses are not prevented, but they occur later and in a milder form even under mercurial treatment. It has no influence upon sequelæ.

[The paper is valuable as a systematic report of a method of treatment, which, though not new, has scarcely received the attention it merits. Exception will be taken by many to the statement that mercury increases the anæmia in this disease; indeed, it has been shown by recent physiological researches that, in small doses, it increases the number of red corpuscles. (See LONDON MEDICAL RECORD, February, 1876.)—*Rep.*]

RALPH W. LEFTWICH, M.D.

KEYES ON SYPHILITIC AFFECTIONS OF THE BURSE.—Dr. E. L. Keyes publishes in the *American Journal of Medical Science* for April, a paper in which he gives cases of tertiary syphilitic affection of synovial bursæ occurring in his own treatment and collected from the writings of Verneuil, Moreau, and Petit, in all fourteen. Of these, however, two are excluded on account of imperfection. He sums up by remarking that it appears that secondary syphilis attacks the bursæ as a congestion, which, as in the early congestions of secondary syphilis, may be accompanied by pain, but which is indolent when it goes on to effusion.

Tertiary syphilis, when primarily affecting the bursæ, is in all cases insidious in its course, and indolent at first, never becoming painful until the integument is involved secondarily. When the integument becomes involved, some pain is to be expected, as observed in a few cases.

The bursæ occasionally fluctuate slightly, and probably always contain some fluid between their thickened walls, although palpation may not detect it. The presence or absence of an appreciable amount of fluid, however, does not affect the character of indolence, which seems to be common to tertiary bursitis (unless complicated by actual inflammation) with many other tertiary lesions.

In one-half the cases a traumatic exciting cause may be accused of calling out a local expression of disease; in the others there is no evidence of any such complicating cause. In all, the history, course, and result of treatment mark the malady as essentially syphilitic.

In the six cases where it is mentioned, the average date of appearance of the affection after chancre was (shortest $1\frac{1}{2}$, longest $8\frac{1}{2}$ years) a little over five years.

Whenever two bursæ were involved at the same time in one patient, they were symmetrical. Of the twelve cases, in eight the bursæ affected were situated about the knee; bursa in front of the patella double, three times; single, twice; bursa over tuberosity of tibia, once; bursa between insertion of semitendinosus and lateral ligament of knee, double, once; single, once. In the other four the bursa involved was in each case unilateral; once, over malleolus

once, under corn; once, in the palm of the hand; once, over the olecranon.

The average age of the patients was about thirty-five. Both sexes seem to suffer equally, but in all the females the bursæ about the knee were alone involved.

Treatment always afforded relief, which was generally very rapid and brilliant, especially at the beginning of an active course. Very speedy cure was effected in some of the cases. Mixed treatment in one of its forms, the mercury being used externally or internally with iodide of potassium in excess internally, seems to yield as good results as can be desired.

RECENT PAPERS.

Syphilitic Affections of the Nerves. By M. Alfred Fournier. (*Le Mouvement Médical*, January 15, 1876.)

Lectures on Aphasia and Right Syphilitic Hemiplegia of the Intermittent form. By Dr. Charles Mauriac. (*Gazette Hebdomadaire de Médecine*, January 28.)

Treatment of Pharyngo-nasal Syphilis. By M. Charles Maurice. (*Bulletin Général de Thérapeutique*, February, 15.)

Cerebral Syphilis. By Dr. Vergely. (*Ibid.*)

Lectures on the Intermittent form of Syphilitic Aphasia, and right hemiplegia. By Dr. Mauriac. (*Gazette Hebdomadaire*, February 18.)

MATERIA MEDICA AND THERAPEUTICS.

HOLMES ON SOME AMERICAN MEDICINAL PLANTS.—Mr. E. M. Holmes, in the *Pharmaceutical Journal* for April 1, says:—California has lately proved a prolific source of new drugs for investigation and trial in America, and two more new medicinal plants have been lately introduced into notice from that country. Through the kindness of Professor Maisch, of Philadelphia, specimens of these have been presented to the Pharmaceutical Society's Museum, and a short notice of them may not be unwelcome to those who take an interest in the pharmacy of the sister country.

Eriodictyon Californicum, Benth.—This drug consists of the leafy tops of the plant, the leaves being stuck together by a resinous exudation which gives quite a varnished appearance to the upper surface of the leaves and to the stems, the under surface of the leaves, except the veins, being almost entirely free from this resinous substance. It is this curious character of the leaves which give rise to another name for the plant, *E. glutinosum*.

The leaves, which are leathery but brittle, are elliptic-lanceolate in outline, tapering below into a short petiole; the margins of the leaves being slightly toothed. The upper surface of the leaves is smooth and the veins are indistinct. The under surface is whitish from the presence of minute downy hairs, and the veins are prominent, the midrib forming a stout keel. Owing to the resinous coating on the veins, the under surface of the leaf has a strongly reticulated appearance. The taste of the leaves is very similar to the odour exhaled in spring by the opening buds of the well-known balsam poplar (*Populus Tacamahaca*, Mill.)

The plant yielding these leaves is an evergreen shrub, about four or five feet high, which grows abundantly in dry rocky places on the mountains of Northern Mexico and Southern and Central

California. The leaves are alternate, three to four inches long, and from half to one inch broad in the middle. The light purplish blue flowers are arranged in scorpioid cymes, the flowers themselves bearing a distant resemblance to the common lung-wort (*Pulmonaria officinalis*, L.) of our gardens. The plant belongs to the natural order Hydrophyllaceæ, a family nearly allied to the Boraginaceæ, from which it differs chiefly in the parietal placentation of the capsular fruit.

For the following remarks I am indebted to the *Pharmacist*, February, 1876, p. 34. 'The plant has long been used by the Spaniards and Indians as a specific for lung-diseases, from which it has obtained the name of "consumptive's weed." It is also known as "yerba santa," "mountain balm," and "bear's weed," from the partiality which bears show for its foliage.'

Dr. J. H. Bundy, of California, reports that he has cured some severe cases of chronic bronchitis; that he has successfully treated pneumonia with the drug, and that he has noticed a peculiar action upon the kidneys resulting from its use. The natives are said to make an aqueous decoction as a general tonic, and a decoction with whisky for chronic lung diseases. In acute coughs and colds it appears to be of little value.

Mr. H. S. Wellcome treated the leaves with strong alcohol for an hour, which dissolved all the surface resin, and left on evaporation an amber-coloured aromatic resin. On being afterwards exhausted with alcohol, the leaves yielded a dark green resin similar to the first in general character, but having a bitter taste. A subsequent aqueous infusion of the leaves which had been exhausted by alcohol yielded an intensely bitter extract. He therefore recommends the drug to be used in the form of tincture, 4 ozs. of the leaves being used to a pint of spirits of wine containing 75 per cent. of alcohol. Of this tincture the dose is 1 to 2 drachms. A syrup may be made by triturating the resin with powdered French chalk and then following the process for making spirit of tolu. The syrup thus made has an agreeable odour and taste, like that of the pine-apple.

Raíz del Indico.—This name is used by the natives of Mexico for the root of a plant growing along the Rio Grande.

The root received from Professor Maisch consists of fusiform tubercles, about 2 inches long, and nearly $\frac{3}{4}$ of an inch broad in the middle; the external surface is dark chocolate brown, and strongly wrinkled, with a few transverse ridges. The internal surface is of a rather paler brown colour with a reddish tinge, but does not usually present any marked feature. In some pieces, however, the large medullium can be distinguished from the cortical portion, which occupies only about one-fourth of the diameter of the root. The taste is very astringent.

Mr. F. G. Voelcker, who has examined the root, reports that the leaves of the plant, as grown by him, are entire, petiolate, 12 to 13 inches long by $2\frac{1}{2}$ to 3 inches wide, oblanceolate in outline, acute, glabrous, shining, juicy, and of a light green colour, and that from the stipules and the general appearance of the plant he infers that it belongs to the Polygonaceæ, although he has not seen the flowers.

This root does not appear to possess any advantage over bistort or other polygonaceous roots, but is chiefly interesting on account of the results obtained from a chemical examination of it. These results, as recorded by Mr. Voelcker, show that the root as-

simulates closely to rhubarb in composition. Thus, by treatment with ether, he obtained crystals, giving the reactions of chrysophanic acid, and by subsequent treatment with alcohol, he obtained bodies which he considers to be aporetin, phæoretin, and erythroretin. He also found oxalate and malate of calcium, starch, gum, albumen, glucose, and 23.16 per cent. of tannin.

WILSON ON THE DIET OF CHILDREN.—In his lectures on Dermatology at the Royal College of Surgeons (February, 1876), Professor Erasmus Wilson, speaking on the treatment of ringworm by diet, makes the following remarks. Adults deem it necessary to have three nutritive meals in the day, whilst the children of the same family are often put off with two, possibly because they are little; but they have in reality the germs of the future great, and have an abundant employment for their nourishment in building up a healthy structure for the coming man. If they be deprived of the wherewithal, the coming man and all that springs from him in the future will be weak and feeble, and as time wears on will develop those diseases which are known to be the consequence of a feeble constitution. How often do we find the diet of children reduced to the miserable standard of bread and butter and milk and water for breakfast; for dinner, meat and milk, and rice puddings, with water; and in the evening bread and butter and milk and water. No better method could be devised for engendering ringworm, scrofula, phthisis, and cancer. W. DOUGLAS HEMMING.

BENNETT ON HEAT IN THE TREATMENT OF CEREBRO-SPINAL MENINGITIS.—In the *Cincinnati Clinic* for March 25, Dr. J. D. Bennett, of Assumption, Illinois, says that the treatment which he found most successful in cases of cerebro-spinal meningitis was large doses of bromide of potassium repeated every hour or two, a blister over the spine, cold applications to the head, and the continued application of heat to the cutaneous surface. He regards this last of more importance than any one other thing in the treatment. His usual way of applying heat is, after the hot bath, to fill a small jug with hot water, wrap it with flannel and apply to the feet, fill some bottles and apply to the legs and hips, and keep them there as long as they afford relief, for which the patient is too glad to be much annoyed by their presence.

There is one thing which should be remembered; both the internal and external temperatures are subject to very sudden variations. These correspond with the fluctuations of the pulse, which rises or falls according as the internal temperature varies; and we have to regulate our treatment as these changes occur, gradually abating the hot applications as the pulse becomes normal.

HALL ON THE TREATMENT OF SUNSTROKE BY THE SUBCUTANEOUS ADMINISTRATION OF QUININE.—Mr. A. R. Hall, Surgeon Army Medical Department, in the *Practitioner* for March, remarks that the experience of several medical officers in India is now apparently sufficient to prove that the hypodermic injection of quinine in heat-apoplexy is the most successful method of treatment that has yet been adopted. In May 1869, Mr. Walter Kerr Waller, of Calcutta, told him that he had been very successful in treating sunstroke by doses of 20 or 30 grains of quinine given by the stomach, and advised

him to try it. A short time afterwards, Mr. Hall was called to see a driver of his battery, at Barrackpore, near Calcutta, who was a patient in hospital, and who was knocked down with heat-apoplexy about five o'clock in the afternoon. He found him completely comatose, with dilated pupils, stertorous breathing, face very much flushed, skin of body red and burning hot, pulse full and rapid. He dissolved 20 grains of quinine in 20 minims of dilute sulphuric acid, and about three ounces of water, and attempted to make him swallow it; but in vain. He therefore thought it a good opportunity for trying the hypodermic method. A solution of 5 grains of quinine in 5 minims of dilute sulphuric acid, and 50 minims of water, was put under his skin, in different places about the shoulders. Within one hour, the heat of surface had perceptibly decreased; he steadily improved during the night, was quite sensible next morning, and recovered without any bad symptoms. Surgeon J. Anderson, at present with the 'Chestnut troop' of Royal Horse Artillery, shortly afterwards, in the same hospital, treated a case with equally satisfactory results. Mr. Hall attended five cases of heat-apoplexy at Barrackpore, and employed this method, and they all recovered.

McKIE ON ASCITES TREATED WITH STRYCHNIA. In the *American Journal of the Medical Sciences* for April, Dr. McKie, of Woodlawn, South Carolina, states that a number of years ago a negro woman with ascites, who had been repeatedly tapped by another physician, came under his observation. The tapping was continued with considerable regularity every two weeks until the patient from some cause became hemiplegic. For this strychnia in increasing doses was prescribed, and persisted in until she recovered the use of her leg, the arm remaining useless. Under this treatment the dropsy disappeared and never returned, although the woman lived several years afterwards.

In February, 1872, Dr. McKie was called to a mulatto woman in whom abdominal dropsy had been suddenly developed, to such a degree as to require the use of the trocar early in the disease. After practising this mode of relief with considerable regularity, at intervals of about twelve to fourteen days, for a period of six months, strychnia was then given regularly three times a day for about seven weeks, and soon afterwards tapping once a month was found sufficient. The use of the strychnia was then abandoned, and the tapping resorted to every month as usual. Two years ago she again began the use of this drug in increasing doses as before, and continued it as the system would tolerate, about twelve weeks. In February, 1876, eleven months had elapsed since the last tapping, and she reported that the belly was not larger than it was before she was first attacked.

Whether these two cases are mere coincidents, or the effect of strychnia, Dr. McKie says, it is not attempted to decide, and the facts are mentioned that others who are inclined to do so may give it further trial.

BINZ ON THE USE OF ALCOHOL IN MEDICINE.—Professor Binz, of Bonn, in an article in the *Practitioner* for May, thus sums up his views regarding the use of alcohol in medicine. 1. Alcohol is very frequently a stimulant of transitory power; 2. In relatively large doses it can serve as a vigorous antipyretic; 3. Alcohol, given in small and oft-

repeated doses, is a food particularly adapted to cases where the stomach can take in no other 'combustible material' to supply warmth and working energy to the organism.

'While I thus share in the views which the late Dr. Anstie ably upheld in England, I do not hesitate, on the other hand, to declare, with respect to the requirements of the healthy organism, that I consider the use of alcohol in health as entirely superfluous.

'Where the digestion is healthy, and where a sufficient transfer of nutritive material takes place from the food to the blood, the human body is capable of accomplishing all the functions for which it is designed, and that without the use of spirituous drinks. But the case assumes a different aspect as soon as these two conditions fail. A physician may therefore recommend total abstinence to healthy persons in every instance, but he throws away one of the most valuable of medicines if he carries this principle of teetotalism into the sick-room.

BRENCHELEY ON THE TREATMENT OF INCONTINENCE OF URINE.—Mr. H. Brenchley (*Practitioner*, May), recommends the following formulæ, which he has found beneficial in several cases of incontinence of urine :—

R. Tinct. Ergotæ ℥x
Tinct. Ferri Perchlorid. ℥v
Spt. Chloroformi ℥v
Infus. Quassiae ad ʒj. Ter die sumend.

RECENT PAPERS.

- On Cold Baths in the Treatment of Cerebral Rheumatism. By Dr. Béhier. (*Bulletin Général de Thérapeutique*, April 15.)
- Inquiry into the Method of Hypodermic Injections. By Dr. Sutton. (*Le Mouvement Médical*, April 8.)
- Essay on the Doses to be Administered to Children. By M. Jules Simon. (*Ibid.* April 1.)
- On the Relative Powers of Fresh and Previously Used Pepsine in the Digestion of Albumen. By Dr. Ransome. (*Journal of Anatomy and Physiology*, April, 1876.)
- The Ways of Elimination and the Elective Action of Quinine. By Drs. Pietro Albertoni and Francesco Ciotto. (*Bulletin Général de Thérapeutique*, April 30.)
- On a Method of Administering Salicylic Acid internally. By M. A. Cassan. (*Ibid.*)
- Comparative Action of Pepsine and Pancreatine on Albuminoid Matter. By M. A. Petit. (*Journal de Thérapeutique*, April 25.)
- On Hæmospasia. By Dr. Brochin. (*Gazette des Hôpitaux*, April 25.)
- The Administration of Soluble Albuminate of Mercury. By Dr. E. W. Hamburger. (*Wiener Medizin. Wochenschrift*, April 1.)
- On the Active Constituent of Secale Cornutum. By Dr. Salkowski. (*Berliner Klinische Wochenschrift*, April 24.)
- Lactic Acid as a Hypnotic. By Dr. E. Mendel. (*Deutsche Medicinische Wochenschrift*, April 29.)
- Researches on the Local Action of so-called Astringents on the Vessels. By Dr. H. Rosenstern. (*Verhandlungen der Physikal.-Medicin. Gesellschaft in Würzburg*, Band ix. 1875.)
- On Febrifuges. By Dr. C. Binz. Part II. (*Practitioner*, May.)
- On the Influence of Sea-voyages on the Human Body, and their Value in the Treatment of Consumption. By Dr. C. B. Faber. Part II. (*Ibid.*)
- Use of Blisters in Chronic Ulcers. By S. D. Turney. (*Ibid.*)
- On Official Dosage, with some Remarks on Homœopathic Tinctures. By Dr. R. Farquharson. (*Ibid.*)
- The Use of Choleate of Soda to prevent the formation of Gall-stones. By Dr. William C. Dabney. (*American Journal of Medical Sciences*, April.)
- On the Antiseptic Power of Salicylic Acid and certain of its Compounds, compared with other Antiseptics, therapeutically considered. By Dr. Lapper. (*Dublin Journal of Medical Science*, April.)
- Physiological Action of Condurango. By Dr. Lauder Brunton. (*Journal of Anatomy and Physiology*, April.)

PSYCHOLOGY.

ASHE ON GENERAL PARALYSIS OF THE INSANE. — Dr. Ashe (*Journal of Mental Science*, April, 1876) has published an article in which he puts forward two very original ideas on the causation of general paralysis.

Briefly summed up, they may be stated to be ; (1), that general paralysis is caused by beer ; (2), that it is caused by an excess of phosphorus in the system.

Alluding to the two universally acknowledged forces operating in the production of the disease, viz., alcohol and excessive sexual indulgence, Dr. Ashe informs us that general paralysis is scarcely to be found in Ireland, though common in England and Scotland. He is of opinion that the disproportion in the frequency of the disease in the two countries must be held at once and entirely to negative the theory that its development is due to excess in the use of ardent spirits, and that he may add that it equally negatives the view that it is due to venereal excesses ; for certainly neither in the one direction nor in the other can it be asserted that the Irish peasant is more abstemious than his English neighbour. And, moreover, as regards the use of ardent spirits, anyone in Ireland could at once count up 10 per cent. of the asylum population whose insanity has been caused by the abuse of distilled liquors ; but the disease does not take the form of general paralysis.

But it appears to Dr. Ashe that there is a form of alcoholic indulgence in which the Englishman and Scotchman markedly distance the Irishman ; and this is the consumption of malt liquors, of which the Irishman uses but very little, but the Englishman and Scotchman a great deal.

Whether such a result should be regarded as due to the use of pure and unadulterated malt liquors, or is rather to be considered as the effect of some adulteration thereof (such as *coccus Indicus*) is an open question.

Dr. Ashe thinks that the remarkable absence of the disease in Ireland is quite sufficient to prove further, that even immoderate sexual indulgence is not a *vera causa* of the disease. Were it so, they would undoubtedly have their share of it in Ireland. But the presence of strong sexual proclivity during the course of the disease is undoubted, and Dr. Ashe has observed it in every instance. If, then, statistics forbid us to regard it as a cause, it is clear that we are bound to regard it as a consequence of the disease. It appears from numerous statistics that Ireland is almost entirely free from this disease, whether in public or in private asylums.

Another well known consequence in general paralysis is the marked tendency to fatty degeneration of all the tissues, as shown by *post mortem* examinations.

In seeking, therefore, the pathological cause or condition of general paralysis, we have the following indications of causation.

1. Fatty degeneration of all the tissues, the voluntary and involuntary muscles, the bones, glands, and brain alike giving evidence of this condition.

2. A considerable removal of the earthy constituents of the bones, to which, along with the above-mentioned fatty degeneration, the great tendency to fracture of the bones in this disease is due.

3. Considerable increase of sexual proclivity.

4. Epileptoid convulsions.
5. Alternations of excitement and depression.

It appears to Dr. Ashe that in the above summary we have an exact picture of the effects of an excess of phosphorus in the system.

Thus Pereira mentions its tendency to cause gangrene and convulsive affections. Its aphrodisiac properties are well known; and also its effect in causing temporary stimulation with subsequent depression of the entire nervous system. The well known caries of the jaw, which is found in the workers in phosphorus, very well illustrates its power of removing the earthy constituents of bone; it probably finds access, as Pereira suggests, to the jaws during life through carious teeth; to the bones in general paralysis it would, of course, have universal access if diffused through the blood.

Quite in accordance with this view of the pathological causation of general paralysis is the well known fact that its victims—in the better classes, at least—are generally men of more than average mental endowments; that is to say, according to the views generally adopted, men of more highly phosphorised brains than usual. It is found, Dr. Ashe believes, usually in men who have spent a life of active brain-exertion in a narrow and limited direction, men of intense application, rather than wide culture and numerous interests; and among such persons it is found after their withdrawal and retirement from the interests that have perhaps too completely engrossed them. The merchant retired from business is, perhaps, the type of this class; and the explanation of the phenomenon is, to Dr. Ashe's mind, of the following nature, viz., that during an active life of mental energy the phosphorus of the brain is oxidised, or burnt off into phosphoric acid, by volitional thought-processes; but that on retirement from business, when the intellect, not having a wide cultivation or broad range of interests, has but little to engage itself with, the phosphorus is discharged from the circulation in an unoxidised condition, and general paralysis is the result. It may be asked, how do we account for its non-appearance in the urine in the shape of excessive phosphates? Dr. Ashe replies that probably it passes off in the shape of hypophosphorous acid gas from the lungs, which is the method by which phosphorus, when taken internally, appears to be got rid of.

Dr. Ashe thinks we have got a hint as to that residuum of unexplained causation indicated by the difference of frequency of the disease in England and in Ireland. As a rule, England feeds on a more highly phosphorised diet than Ireland. Where England consumes cereals, a phosphorised diet, Ireland consumes the potato, a non-phosphorised. Hence, the sum total of the causation would stand as the product of a predisposing cause and a predisposed nervous system, in both of which elements of causation—if they be what Dr. Ashe has propounded—Ireland has the advantage of England. Dr. Ashe states that he is unable to discover, either by statistics or reflection, any other elements of causation in which the two countries differ.

H. SUTHERLAND, M.D.

CARPENTER ON FOREIGN BODIES IN THE BRAIN.

—Dr. W. B. Carpenter, attending physician to the Kansas State Prison, relates the following case in the *American Journal of Medical Sciences*, April, 1876. Thomas Waters, a prisoner in the Kansas State Peni-

tentiary, aged twenty-eight, who had been insane for some time, and who, during his imprisonment, had attempted suicide by swallowing a quantity of chloroform which produced violent emesis, was one evening in 1874 reported by the hospital nurse to have been putting 'wires and things into his head,' and was found, when visited by the surgeon, sitting quietly upon his cot, 'very polite,' and willing to have his head examined. This was accordingly done, when a small punctured wound was discovered an inch above the top of the right ear, from which was withdrawn, by means of bull-dog forceps and forcible efforts, a piece of No. 20 broom wire, four and three-fourths inches in length and perfectly straight. This wire had been retained in the brain for twenty-four hours, and produced no other inconvenience than severe headache, which disappeared within thirty minutes of its withdrawal. Four weeks later, Thomas Waters seized an awl and a wooden bucket lid, and by means of the latter drove the former through the top of his head up to the handle. No untoward consequences followed upon this daring experiment; and shortly afterwards Waters introduced another piece of wire, nearly seven inches in length, into the lateral opening in his head, causing it by repeated thrusts to transfix both hemispheres and impinge upon the skull at the opposite side. The result of this operation was that paralysis of the left leg and arm was induced, and that he was found in the morning 'lying helpless upon his mattress.' This paralysis and helplessness were, however, of short duration. In two weeks he began first to use the hand, then the foot, then the limb, and finally to walk. The brain-punctures and lacerations, indeed, seem to have had a beneficial effect upon Waters, for, after the third of them, he expressed a desire to live and get well, which he had not previously done; and live and get well he did. At times he had moments of reflective abstraction, but as a rule he was 'cheerful, conversant, and even witty.' Headaches occasionally troubled him; and these, when questioned about them, he was disposed to attribute to a needle and a nail, which he remembered having placed in his brain and which, with touching faith, he believed were working their way out. At the expiration of his term of imprisonment he was discharged, and died a week afterwards from a dose of morphia which he had taken, it is argued, to secure sleep, and not with a view to suicide, because he had persuaded the druggist from whom he bought it to give him handsome discount. A necropsy on his body was held in the presence of Dr. Carpenter and of Dr. Charles C. Stroyer, when, in the medullary substance of the middle lobe of the right cerebral hemisphere there were found lying side by side, in a horizontal position, a piece of No. 20 brown wire two and one-sixteenth inches in length, and a large button needle with a piece of black linen thread attached. No traces of former lacerations of the brain-substance could be detected, but in the neighbourhood of the thread the cerebral matter was broken down and discoloured. Transfixing the brain vertically in the frontal lobe, immediately in front of the fissure of Sylvius, but not wounding the corpus striatum or the island of Reil, were another piece of wire, and an imperfect four-penny finishing nail, flat pointed and headless, measuring one-fifth of an inch in width at its broadest part. All the foreign bodies were more or less insulated by gelatinous substance closely adhering to them. Waters was strong, healthy,

vigorous, well formed, witty, and of kind social qualities to the last, having a fine manly figure, a well-developed brain, weighing, after drainage of the first extreme congestion, fifty-six ounces.

On reading this remarkable case one knows not whether to admire most the 'charmed' character of of the life borne by Thomas Waters, the ingenuity of his attempts at self-destruction, the liberality with which lethal weapons were supplied to him in the Kansas Prison, or the sublime indifference to detail in everything, except the length of the wires, with which the report is drawn up.

J. CRICHTON BROWNE, M.D.

DUGAS ON THE TREATMENT OF MANIA À POTU.—In a paper read before the Medical Association of Georgia, Dr. A. L. Dugas (*New York Medical Record*, April 1, 1876) describes his treatment of this affection. It consists in administering cold affusion once or twice a day, giving such food as may be relished, and at times two or three small glasses of toddy. If the patient be very unruly, one or two intelligent persons should attend him day and night as long as may be necessary. For the affusions the patient is stripped of all garments and seated in a tub, and the physician then pours one pitcherful after another over the head in a regular stream, which will pass down over the entire body. The affusion is to be continued from one to three minutes by the watch. The pulse, at first full and strong, soon becomes small and frequent. The physician should watch this carefully, and cease whenever the patient is entirely rational and the pulse sufficiently subdued. After the patient is rubbed and dried, and the room darkened, he will generally sleep six or eight hours, and awake perfectly rational. With the exception of toddy, all narcotics are eschewed in the management of the case.

[This method of treatment appears to bear a strong resemblance to the old-fashioned treatment of the drunkard, which consisted in placing the patient's head under the pump, a proceeding usually having a remarkably sobering effect.—*Rep.*]

W. DOUGLAS HEMMING.

RECENT PAPERS.

- On Second Sight or Deuteroscopia. By W. A. F. Browne. (*Journal of Psychological Medical Science*, vol. ii. Part I.)
 Intemperance and Dipsomania as Related to Insanity. By Dr. E. Mann. (*Ibid.*)
 Mechanical Restraint in the Management or Treatment of the Insane. By Dr. F. Murchison. (*Ibid.*)
 Contributions to the Physical Psychology of Criminals. By Dr. Benedikt. (*Ibid.*)

OBSTETRICS AND GYNÆCOLOGY.

HEGAR ON THE REMOVAL BY HYSTEROTOMY OF LARGE FIBROID TUMOURS.—In the *Berliner Klinische Wochenschrift* for March 20 and 27, and April 3, Professor Hegar relates two successful cases of this operation. The first patient, aged thirty-three, had been married two years. For three years she had noticed a swelling of the abdomen on the right side. The menses had been regular until the end of April, 1875, when they ceased. The enlargement of the abdomen rapidly increased from that time. In

July, a superficial examination was made, and a hard tumour closely connected with the uterus, and extending above the umbilicus, was discovered. At the beginning of September, the state of affairs had much changed. The abdomen was now much more and very irregularly, distended, and the superficial veins were enlarged, especially upon the left side, which was most prominent. A hard nodular tumour was felt in the left loin, extending to the middle line, midway between the umbilicus and ensiform cartilage, and having its long axis transverse. Strong friction could be produced by moving the abdominal walls over the tumour. On the right side of the abdomen a second fluctuating swelling could be felt, reaching as high as the umbilicus. Over this a maternal souffle and foetal heart-sounds were detected. The tumour on the right side was punctured with a fine trocar. The cannula brought away some shreds which showed involuntary muscular fibres, and much fatty and disintegrating tissue. It was therefore concluded that the tumour was a fibroid commencing to break down, and that further disintegration was to be feared before the child could become viable. As the patient's general condition was also unsatisfactory, it was decided to induce abortion. A bougie was introduced on October 8, and on the 12th delivery was completed naturally, the foetus being of about six months' development. On November 4, a careful examination was made under chloroform. The tumour had returned to its former position: it was fixed, and the abdominal walls were but little movable over it. By carrying two fingers high up in the rectum, a firm band, apparently a pedicle, could be felt running from the left angle of the uterus to the tumour.

The operation was performed on November 8. The incision extended from six centimètres above the umbilicus to one centimètre above the pubes. Some adhesions of the omentum in front were ligatured and divided. The chain of an écraseur was carried, by means of a bent sound, round the pedicle of the tumour, which was found, as expected, to be a narrow one. The chain was then attached to the écraseur and tightened. The front of the tumour was then separated pretty easily by the hand from the abdominal wall to which it was adherent, and the tumour itself was drawn out of the abdomen. The pedicle was four centimètres long, and three to four centimètres thick, and was attached to the left angle of the fundus uteri. A strong silk ligature was passed through the pedicle for additional security, and the tumour cut off beyond it. When the pedicle was drawn by the ligature and écraseur into the angle of the wound, it was found to have been cut half through by the wire, close to the angle of the uterus, and considerable bleeding took place. It was seen also that the uterus was a good deal enlarged, and contained several other small fibroids: It was therefore resolved to amputate the uterus and ovaries. A double wire was passed through the middle of the cervix; the wires were brought round below the ovaries at each side, and tightened by Cintrat's serre-nœud. Above these, for the sake of security, a third wire was passed round the whole mass, and then tightened and twisted by a serre-nœud, which was afterwards removed. The uterus and ovaries were then cut off; the surface was cauterised; and the stump was fixed in the angle of the wound by two long needles passed through it, and through the abdominal walls, the first two serre-nœuds being left in position. The patient suffered from dragging pain for the first day,

but the temperature never rose above 102° Fahr., nor the pulse above 108, and she recovered well. On the twelfth day, the stump, which had become very offensive, was cut off below the wires. Its remnant was then retracted into a depression four centimètres deep, which began to granulate up as soon as the slough had separated. On December 9, the patient left her bed.

The second case was that of a woman, aged forty-two, who had had three children, the last thirteen years previously. Enlargement of the abdomen had been noticed for seven years, and for many years menstruation had been profuse. For three years the hæmorrhage had been becoming increasingly severe, and no treatment was of any avail in checking it. The patient also suffered much from the weight of the tumour, and was very anxious for its removal. Her general condition was favourable, although there was marked anæmia. The tumour was hard, uniform, and movable, reaching to half-way between the umbilicus and ensiform cartilage. By vaginal and rectal examination, it was made out that the growth seemed to spread out immediately from the internal os uteri. A diagnosis was made of an interstitial fibroid, in which the uterus was incorporated, but without any notable adhesion to surrounding parts.

The operation was commenced by an incision extending from 2½ inches above the umbilicus to 0.4 inch above the pubes. The tumour was without much difficulty drawn out of the abdomen by tenaculum-forceps, but great tension was thus placed upon its short neck. The broad ligaments were lax, and attached to the tumour high up. It was found possible to pass a double wire through the neck of the uterus, and to fasten one wire on each side below the ovaries by means of a serrenœud, which was left in position. As in the former case, a third wire was passed round the whole for the sake of security, and the tumour cut away. It was now found impossible to pass a needle beneath the ligatures, but it was necessary to carry it through the abdominal wall, and through the stump above the constricting wires, which were drawn inward with very great force, so that the ends of the serrenœuds were buried, and their stems cut a groove in the abdominal walls. The wires were tightened from time to time, and on the eleventh day the gangrenous tissue was cut away and the serrenœuds were removed, leaving the divided wires in the stump. On the twelfth day the transfixing needle was also removed, since it was cutting deeply into the abdominal walls. The result of this was unfortunate, for the stump became retracted into a very deep depression, and rigors and febrile symptoms followed. The wires that remained were, however, drawn up and fixed to a piece of wood; the stump was cut off below them on the fourteenth day, and the patient after this progressed well. She left her bed on the forty-first day.

The author believes that hysterotomy, performed after the method adopted in these two operations, will displace ovariectomy from the prominent position which it now holds in surgery. On account, however, of the great breadth of the stump, and its richness in vessels, it is far more difficult to manage than the pedicle of an ovarian tumour, so that the dangers of hæmorrhage and of septic infection may be avoided. Professor Hegar considers that it is preferable to make an incision, if necessary, nearly to the ensiform cartilage, rather than to attempt to

diminish the tumour after the plan of Péan, who recommended that wires should be passed through so as to isolate parts of it, and that these should be cut away in succession. He thinks, however, that the chain of an écraseur may in most cases be passed round the base, and the tumour might then be divided without fear of hæmorrhage. The method of Péan, on the contrary, he believes to afford no security against bleeding.

A. L. GALABIN, M.D.

CROMBIE ON THE CAUSE OF THE COMMENCEMENT OF PARTURITION.—Dr. Charles M. Crombie, in a paper read before the Aberdeen Medico-Chirurgical Society, dilates on the little that is known on the subject. Sir James Simpson's theory that disintegration of the decidua is the cause of labour is, he says, but a part of the truth; it stops very far short of a consistent explanation. As regards the manner in which labour sets in, it is important to notice the absence of any sudden or eruptive element. It is a gradual and regular increase which makes the stages of labour. During pregnancy there is a constant struggle between the uterus and ovum, which the uterus at last terminates by the eviction of the latter. In support of this, the following arguments are adduced.—1. The growth of the muscular tissue of the uterus is not consistent with a state of absolute torpor of the same; action advances muscular development, inaction retards it. 2. The phenomenon of abortion or premature labour points to an unceasing power of expulsion. 3. The sensation of 'quickening' is to be referred to uterine action, since 'quickening' may take place so early as the end of the second month, when the fœtus has no inherent motion: hence the so-called foetal movements are uterine contractions. 4. Lastly, Dr. Crombie points to the gradual approach of the actual process of parturition, under the form of 'false pains,' supervening some days before the positive symptoms of labour commence.

Looking at the gravid uterus from a dynamical point of view, Dr. Crombie says the ovum is retained by means of the hydrostatic action of the liquor amnii, which distributes the pressure exerted on it by the uterine contractions equally in all directions; when the balance between these opposing forces is lost, labour results.

FANCOURT BARNES, M.B.

CUMMING ON THE UTERINE SOUFFLE AND THE FETAL HEART.—Dr. James Cumming of Edinburgh, in a paper read before the Obstetrical Society of that city, remarks that the uterine souffle is a 'symptom' and not a sign of pregnancy. He considers that the theory that the souffle is produced by the vessels which ramify in the uterine walls is correct. Inasmuch as Carrière and Collins heard the souffle, the one twenty-four, the other forty-four hours, after the expulsion of the placenta, Dr. Cumming rejects the theory of the souffle arising from the utero-placental site. Dr. Cumming has also arranged tables showing the relation between the number of pulsations of the foetal heart, and the weight of the child; from which he concludes there is a relation between the weight and pulsations of the fœtus *in utero*. From several cases in which he has made observations, Dr. Cumming has found no relation between the foetal and the maternal pulse. In conclusion, he believes that the indications from auscultation of the foetal heart are of a certain value in the diagnosis of the sex of the fœtus *in utero*, but cannot solely be relied upon.

PREWITT ON MENSTRUATION FROM THE PEDICLE AFTER OVARIOTOMY.—Dr T. F. Prewitt of St. Louis relates in the *American Journal of Medical Sciences* for April, the case of a woman aged thirty-nine, who first perceived a tumour in the abdomen immediately after confinement in August, 1864. Between that time and October, 1874, she had two labours at full term and one miscarriage, and was tapped four times. In October, 1875, ovariectomy was performed; and the pedicle, a long narrow one, was clamped outside the wound. In January, 1876, she called on Dr. Prewitt, looking improved in health and rapidly gaining flesh.

A small red granulating tumour as large as a small cherry projected at the site of the pedicle, and from this a discharge of blood took place at each menstruation, and continued during the whole of that period. She was then menstruating for the third time since the operation, and this phenomenon had occurred during each of the periods. Menstruation was otherwise normal.

RECENT PAPERS.

Note on the Use of Hydrate of Chloral in assuaging the Pains of Child-Birth. By Dr. Polakillon. (*L'Union Médicale*, April 15.)

Uncontrollable Vomiting: Induced Premature Delivery. By M. Chassagny. (*Lyon Médical*, April 9.)

Physiological Study on the Abdominal Wall, and the Maternal Souffle of Pregnant Women. By M. F. Glenard. (*Lyon Médical*, April 16.)

On the Difficulties of Diagnosis of Certain Tumours of the Abdomen. By MM. H. Desnos and E. Barie. (*Annales de Gynécologie*, February, 1876.)

Contributions to the Study of Twins. By Dr. Ahlfeld. (*Ibid.*) Pathology of the Placenta. By Professor Ercolani. (*Archives de Tocologie*, April, 1876.)

Pregnancy and Delivery with Imperforate Hymen. By Dr. G. Braun. (*Wiener Medizinische Wochenschrift*, March 25 and April 1.)

On the Complete Evacuation of the Uterus after Abortion. By Dr. A. R. Simpson. (*Edinburgh Medical Journal*, May.)

On Rupture of the Perinæum, and especially on the Division of the Perinæum and Rectovaginal Septum, by Post Partum Sloughing. By Dr. Matthews Duncan. (*Ibid.* April.)

Absence of Uterus, with a Tumour of Doubtful Character in each Inguinal Canal. By Dr. C. E. Underhill. (*Ibid.*)

The Structure of a True Mucous Polypus of the Cervix. By Dr. C. E. Underhill. (*Ibid.* May.)

Perforation of the Uterus with a Sound in a Case of Bilateral Ovarian Tumour. By Dr. J. Elischer. (*Deutsche Medizinische Wochenschrift*, April 15.)

On the Occurrence of Fat-needles in the Vaginal Mucus. By Dr. Haussmann. (*Ibid.* May 6.)

On the Movement-Phenomena of the Cervix Uteri. By Dr. E. Hoffmann, and Dr. Von Basch. (*Medizinische Jahrbücher der K. K. Gesellschaft der Aerzte*, (Sept. 2, 1876.)

DERMATOLOGY.

PIFFARD ON THE TREATMENT OF THE SCROFULIDES (LUPUS).—Dr. Henry G. Piffard (*American Practitioner*, December, 1875), adopts the pathology and nomenclature taught by Hardy, and the treatment of Hebra. For the cauterisation of the smaller tubercles he uses 'a probe made of irido-platinum. The point of the needle is dipped in fused nitrate of silver, a thin layer of which immediately congeals around it. As soon as it is cold, a second or a third dipping will increase the deposit of silver sufficiently.

With these needles quite small punctures may be made, and are less painful than those made with the ordinary silver stick.'

SCHIEBER ON PELLAGRA IN ROUMANIA.—Scheiber (*Vierteljahresschrift für Dermatologie und Syphilis*, 1875) observes that pellagra is common in Roumania, there being 84 cases amongst 2,500 hospital patients. The disease does not occur amongst the poor exclusively, and, although maize is a common article of diet, many of the patients have other and good food. The author does not believe that the malady is always produced by the use of maize, considering that bad hygienic conditions, telluric and individual peculiarities, play an important part in its origin. It is generally stated that more women than men are affected, but Scheiber found in 136 cases 94 males and 42 females.

BOECK ON JUNIPER FUMIGATIONS IN THE TREATMENT OF SKIN-DISEASES.—Dr. Cäsar Böeck (*Vierteljahresschrift für Dermatologie und Syphilis*, 1875, 4 Heft) describes the following mode of treatment. The surface of the body is subjected to the action of the fumes of moist juniper leaves in cases of prurigo, urticaria, and pruritus cutaneus, with great mitigation of the itching. For example, a woman fifty years of age had been tormented with urticaria from March to September, and was obliged to scratch herself for about an hour every evening before going to sleep. The usual remedies had been fruitless. After two fumigations she was better, after ten* (one daily) she left off scratching and no more fumigations were required.

G. THIN, M.D.

RECENT PAPERS.

On the Use of Serapine in Diseases of the Skin. By M. Aubray. (*Lyon Médical*, April 9.)

On the Treatment of Psoriasis by the Solution of Sulphate of Lime. By Dr. H. Bourguignon. (*L'Union Médicale*, April 13.)

On Enveloping in India-rubber Cloth in the Treatment of Eczema. By Dr. Verité. (*Le Mouvement Médical*, April 15.)

Case of Tuberculosis of the Genito-Urinary Organs. By M. Garin. (*Lyon Médical*, April 30.)

On Eruptions due to the Administration of Quinine. (*Journal de Thérapeutique*, April 25.)

The Histology of Lupus: a Contribution to the Pathology of Retrograde Metamorphosis. By Dr. E. Lang. *Medizin. Jahrbücher* (1876, Heft 1).

REPORTS OF FOREIGN SOCIETIES.

IMPERIAL ROYAL SOCIETY OF PHYSICIANS IN VIENNA.

February 18. *Demonstration of Gynecological Preparations.*—Dr. Funk demonstrated some preparations, and made remarks on diagnosis and therapeutics. He said that now, when the technical part of the operative surgery of women had reached such a state of perfection, special care was demanded in regard to diagnosis and the indications for operation, as much still remained unknown in respect to these. He remarked that the diverging opinions on the effect of an operation, especially a new one, were usually only attributable to the fact that the operation was performed where it was contra-

indicated. He referred to the rapid dilatation of the female urethra for therapeutic purposes, frequently performed in England, but rarely in Austria, although the operation was followed by very good results in cases of great irritability of the bladder, where other means failed. He also referred to the divergent views held as to the efficacy of Hildebrandt's plan of treating uterine myomata by the subcutaneous injection of ergotin, and said that the difference was due to nothing else than the use of the remedy in unsuitable cases. Another instance was the operation of supracervical amputation of the uterus, which was altogether rejected by Scanzoni, although Péan had performed the operation in twenty cases, of which fifteen were successful. Here also the cause of the difference of opinion lay in the want of care as to the indications. Dr. Funk also remarked that, in addition to diagnosis, the determination of the proper time for operation was important, as, from want of attention in this respect, even harmless operations, such as puncture of ovarian cysts, might in some circumstances be attended with danger. It was also necessary, before proceeding to operate, to take into account all the eventualities which might happen. Some of the preparations which he would demonstrate proved the importance of this. He would first make some remarks on the preparations and on some gynecological operations.

Laparotomy, frequently employed in recent times, was performed: 1. for the removal of extra-uterine fetuses; 2. for the relief of internal incarceration, and for the removal of diseased, and sometimes even of normal, organs. In regard to extra-uterine pregnancy, he said that operative proceedings in pathological conditions were the less to be dreaded in the present day, as the peritoneum had generally undergone such changes that an operation could be performed without danger by following Lister's method. With regard to the diagnosis of extra-uterine pregnancy, he referred to icterus as a symptom occurring in cases in which the fetus had continued to grow for two or three months, the membranes then rupturing, and its further development being arrested. He had met with it in three cases, though it was not referred to by other authors; it was probably caused by the absorption of altered blood-colouring matter into the blood. In cases of extra-uterine pregnancy, the condition of vaginal portions of the uterus often resembled that found in cases of intra-uterine tumour. Passing to laparotomy in cases of internal incarceration, he referred to a case of Professor Klob, in which the obstruction was produced by an abnormal band; and pointed out that it must be remembered that such a band might contain a diverticulum of the intestines, as was the case in a preparation which he showed, taken from a girl nineteen years old, in whom a band of false membrane passed from the intestines to the uterus and contained a diverticulum. If this had caused incarceration and an operation had been performed, the band and diverticulum would have been divided, and the patient, rescued from one danger, would have been exposed to another of not less magnitude.

Speaking of the operative treatment of myomata by supracervical extirpation of the uterus, he said, while this operation in the case of subserous tumours was easier than ovariectomy, inasmuch as slight adhesions were generally present, it was more dangerous, as a more extensive abdominal incision was necessary, and the hæmorrhage and subsequent shock

were more unavoidable. In such operations it was necessary always to have restoratives at hand. It was especially worthy of remark, that in cases of uterine myoma other diseases were frequently observed. Thus in 200 patients suffering from uterine tumour, in fifty he had found heart-disease, generally valvular; in thirty-two Bright's disease; in thirty cancer of various organs. He was not able to find any etiological connection between the diseases; and he believed, that in certain cases of valvular disease the venous hyperæmia of the uterus must contribute much to the development of the tumours. Before operating, therefore, on uterine tumours, the previous diseases of the patient must be inquired into. The operation of removing new growths from the cavity of the uterus was indicated in many cases, but should never be performed when parametritis was at the time present.

He related a case which had come under his observation, in which a woman, aged twenty-six, after confinement, had an offensive discharge. The *post mortem* examination showed that this did not proceed from decomposition of retained foetal membranes, but from carcinoma of the uterus. He regarded extirpation of the uterus as indicated in many cases of cancer of the organ, because the operation had already been several times successful, and because the cancer was usually solitary (in eighty-six cases out of 120). The operation was contra-indicated when the disease had spread widely, especially in the neighbourhood of the ureters, and in so-called cauliflower excrescence, as this could be removed by a simple operation.

Finally, Dr. Funk remarked that, when a sound passed into the uterus was found to have entered the peritoneal cavity, it was not to be always concluded that it had passed along the Fallopian tube or penetrated a diseased uterus; there might, as occurred in a preparation which was shown, be a fistulous opening in the uterus, resulting from the bursting of a parametritic abscess.

Hegar's Injection-Apparatus.—Returning to the subject of Hegar's injection-apparatus (see LONDON MEDICAL RECORD for April, page 179), Dr. Mader related an experiment in which he produced an artificial stricture of the colon in the dead body, and allowed water to flow into the bowel. Under slight pressure, the water reached the small intestine; and it was only when the opening of the stricture was a line in diameter that the flow was obstructed. He also produced artificial intussusception, and tried the effect of injecting water into the intestine. No result was produced. He had found the injection of medicines into the intestine very useful in a case of dysentery. He had also made, with negative results, experiments on the effect of injecting carbonic acid as a sedative in cases of uterine cancer. Applied externally, carbonic acid had given relief in cases of articular rheumatism.—Dr. Stoerk said that he had injected carbonic acid into the bladder in cases of painful affection of the organ, with no other result than that of increasing the pain.—Dr. von Basch remarked that carbonic acid had been used as a local application many years ago, but that its employment had been abandoned on account of the want of results.—Dr. Langer said that the injection of carbonic acid into the uterus had been twice followed by death, the cause of which could not be found on *post mortem* examination.

February 25. *Polypi of the Urethra.*—Dr. Grünfeld showed a patient (male) with a polypus of the

mucous membrane of the urethra. These new growths, which occurred both in the male and in the female urethra, usually produced symptoms apparently belonging to very different diseases, and therefore obstinately resisted treatment. Even examination by a metallic or elastic instrument did not generally detect the existence of very soft growths. It was when the vegetations increased in size that their presence first became noticeable. Polypi and condylomata of the urethra generally gave rise to symptoms of gleet; or they more or less completely blocked the urethra and thus simulated stricture. The introduction of an instrument readily produced hæmorrhage; or the growths led to sloughing and perforation, with fistula, as in a case reported by Beyram. In a case related by Roger, retention of urine set in twenty-four hours before death. At the *post mortem* examination, the urethra was found filled with polypoid growths from the external orifice to the bulb. The diagnosis of condylomata or polypi in the urethra, especially at the commencement of their development, was impossible before the invention of the endoscope. In May, 1873, Dr. Grünfeld found, in a patient with gleet, a condyloma larger than a hemp-seed eight or ten centimètres ($3\frac{1}{2}$ or 4 inches) from the external orifice; after its removal, by excision, the symptoms disappeared. In another case, five or six small proliferating condylomata of the mucous membrane of the urethra were cured by cauterisation. In the case now exhibited the endoscope showed, six centimètres from the orifice, a growth about the size of a linseed; the surface was purely granular, and presented numerous small vessels. There were also similar growths at the internal orifice of the urethra. In 1874, Fürstenheim of Berlin detected polypi in the urethra by means of the endoscope. Ebermann had also made an observation on the subject.

Extensive Development of Cysticerci.—Dr. Chiari showed preparations taken from the body of a man, aged sixty-five, who, during his short sojourn in hospital, presented but few symptoms which could lead to the diagnosis of the disease which was found to exist. Up to a short time before admission he had been in good health. For some days he had been melancholic, and on February 15 he had an epileptic attack. In the hospital the epileptic paroxysms increased in number, amounting at last to twenty or twenty-five in a day; at last he became unconscious between the attacks, and died in a state of coma. It was imagined that the case was one of cerebral tumour, ending in inflammation.

At the necropsy, numerous superficial subcutaneous protuberances were found, over which the skin was readily movable. On section, they were found to consist of vesicles of the size of peas, containing a whitish point in their interior. There could be no doubt that the case was one of multiple formation of cysticerci. Further examination detected similar bodies in the muscles of the trunk and limbs, in the subcutaneous comatose tissue, in the substance and in the ventricles of the brain, in the meninges and between them, and in the heart; scattered ones were found in the cutis, pericardium, and mesentery; none in the spinal cord and its membranes, in the lungs, liver, spleen, kidneys, and intestine. All the cysticerci were similar in size, and from their smallness it was concluded that infection must have taken place not long before death. Nothing could be discovered regarding the source of infection. [Nothing is said of the microscopic character of the growths.]

A New Modification of the Plaster of Paris Bandage.—Dr. Zsigmondy described and demonstrated his method. A bag, having sewn over it a layer of calico and linen, and over this a piece of flannel, is filled with plaster of Paris, and immersed in lukewarm water for about a minute and a-half, until the gypsum is thoroughly moistened. The air is pressed out through a small opening, the bag is removed from the water and laid on a flat surface, the gypsum being equally spread by the hands and the folds flattened out. The bag is then applied with the flannel towards the body, and fastened with rollers. The time required for solidification varies from ten to twenty minutes, according to the quality of the gypsum. The thickness of the gypsum in the bag should be about seven millimètres ($\cdot 28$ inch). When the application is to be made to angular parts, such as the heel, slits are cut, and pieces of flannel and linen sewed in. The folds frequently formed in the flannel give no trouble to the patient, and the pressure of the splint is equally diffused. When the dressing is changed, the splint should be accurately replaced in the former position, which, for this purpose, should be previously marked out by ink. If it be desired to form a trap-door in the splint, a single or (better) a double suture should be made at the part. In this way single spots may be kept moist, or a fenestra may be made either before the filling of the bag with gypsum or after setting. The bags can be rendered impermeable by tinfoil, but the process is troublesome and occupies time. Impregnation with stearin and copal is less effectual.

Some examples were given of the modifications of which the dressing is capable, among which were a Petit's boot, with an isolated fenestrated trap-door, in a case of fracture of the leg; a capsule with two trap-doors for a knee-joint; a splint with pelvic band for a fracture of the thigh; a bodice half filled with gypsum and provided with buckles and axillary straps for fracture of the ribs; a ring with a long thumb-shaped process for dislocation of the lower end of the ulna, etc.

Meissner's Plan of Ventilation.—Dr. Zsigmondy showed the action of Meissner's ventilation apparatus in a model of a hospital ward intended for the Philadelphia Exhibition.

ACADEMY OF MEDICINE IN PARIS.

March 23. *Dicrotism and Polycrotism.*—M. Marey read a report on a paper by Dr. E. Maragliano, of Bologna, on dicrotism and polycrotism. The author called to mind that the ancients had thoroughly appreciated the clinical value of the dicrotic pulse, which the graphic method had given the power of studying from the physiological aspect. He contested the theory of normal dicrotism formulated by M. Marey in 1863, which, however, had been for some time abandoned by its proposer from considerations analogous to those developed by the Italian experimentalist. According to M. Marey, dicrotism of the pulse depended—1. On the velocity acquired from the column of blood projected into the arteries; 2. On the elasticity and reaction of the vessels inducing an alternately centrifugal and centripetal oscillation. In other words, the shower transmitted by the ventricular systole to the aorta met with obstacles at the periphery and retrograded towards its starting-point, where it found a fresh obstacle, at the retracted sigmoid valves, whence a fresh peripheric shower was

produced without the intervention of the cardiac systole.

April 4. *Leprosy*.—M. Ruz de Lavijon, *à propos* of a patient shown by M. Desprès, made some remarks on leprosy. He said that when the leprosy has attained the stage of sphacelus, the disease is sufficiently characterised by anterior signs not to admit of any doubt. The countenance at this stage is characteristic. The skin is thickened and bronzed. The hair and the eyelids fall off, and the teeth fall out; the ears are enormously enlarged; the nose is almost invisible, in consequence of the fall of the septum; in a word, the features present that peculiar appearance which has given rise to the comparison of the countenance of the leper with that of the lion (leonine leprosy). Besides the classic leonine leprosy, other so-called leprous conditions of the skin exist. In many countries, also, every repulsive affection of the skin, especially of the face, is styled leprosy. It is by no means demonstrated that leprosy is contagious; and if the small number of cases of leonine leprosy in the countries where it is not rare, notwithstanding the absence of all measures of isolation, be considered, its contagiousness does not seem very probable. The heredity of leprosy is also an insufficiently studied point. We hear of families in which there have been one or two lepers, but there are no true families of lepers. With regard to the geographical distribution of leprosy, it seems specially to exist in alluvial districts; it is met with under the equator and at the poles, at the Antilles and in Norway; it is not a climatic disease, but rather, like cretinism, a disease of locality.

Lead-Colic amongst Creoles.—M. Larrey read for M. Bérenger-Féraud a note on lead-colic amongst the creoles of Martinique. Dutrouleau had denied its existence amongst the creoles. The writer supported it by eight cases; he explained the difference of his opinion from that of M. Dutrouleau by the fact that the latter made his observations at the Antilles at a time when the local steam-boat traffic was but little developed, and when the creole engineers and stokers were very few in number, so that at that time the disease was almost exclusively observed amongst the Europeans. Since steam-engines have become general in the Antilles, and the local steam-boat traffic has developed itself, creoles have been employed to attend to the machinery, and lead-colic has shown itself among them as amongst the Europeans. Therefore Dutrouleau was in error in ascribing immunity to the creoles. On this subject, M. Gubler related an interesting account of a family of creoles recently arrived in Paris, and who had been under his care fifteen years. Every member of this family, consisting of seven or eight persons, with the exception of the father, had been attacked by a species of epidemic, which they said was rife in their country, and several of the children had died. M. Gubler ascertained in the case of the mother and two of the daughters the existence of true lead-poisoning, and of paralysis of the extensors of the hands. The cause of this poisoning was sought for in vain. One day one of the girls, who had a sty on her eye, put on it the half of an hard-boiled yolk of egg, a common remedy in the West Indian colonies. The next day the skin of the patient's eyelid had become perfectly black. M. Gubler found that she, as well as her mother and sister, was in the habit of powdering her face with a powder imported from the colonies, and which was also used to powder children. The druggist of the place made and sold this powder

wholesale. M. Gubler had it analysed, and found that it contained 20 per cent. of white lead. The cause of the epidemic complaint was found, and the druggist was obliged to cease from his pernicious traffic, which had already caused the death of a large number of children. The fact tended to confirm the opinion of M. Lefèvre, of Brest, that the dry colic of hot countries is nothing but lead-poisoning. M. Gubler, however, was of opinion that dry colic, not caused by lead, does really exist.

ACADEMY OF SCIENCES IN PARIS.

Feb. 21.—*Application of the Graphic Method to the Phenomena of Digestion*.—M. H. Toussaint submitted to the Academy a memoir on the application of the graphic method, to the determination of the part apportioned to the respiratory apparatus in the performance of some mechanical acts of digestion.

The Excitability of the Heart.—In a fresh note on the excitability of the heart, M. Marey demonstrated that that organ undergoes, at each phase of its revolution, changes of temperature which modify its excitability. He said that experience shows that the excitability of the heart, like that of the other muscles, increases and diminishes with the temperature, but it is also found that the excitability of the heart changes with the different phases of its revolution. We are therefore led to ask, does not the temperature of the heart vary at the different moments of its revolution? and, on the other hand, is not the bearing of these variations such that the lowering of the temperature corresponds with the phase of least excitability? Experiment has verified both these suppositions. The heart becomes warmer whilst it performs its mechanical work, and cools when it relaxes its action. The moment at which the heart will be lowest in temperature, and consequently least excitable, will be that in which it will have accomplished its period of cooling. This then will be the commencement of the systolic phase. Here again theory and experience are entirely at one.

Borax as an Antiseptic.—M. Dumas communicated a letter from M. Schnitzler on the antiseptic properties of borax. The writer called attention to the following facts. Mr. Arthur Robottom, of Birmingham, had found in Southern California a deposit of borate of soda, accompanied by borate of lime and sulphate of soda. Near this deposit he found the carcass of a horse, which had been there for four months and was in perfect preservation, notwithstanding the great heat.—At the dairy farm of Lodi, Signori L. Manetti and G. Musso made four series of experiments on the use of salicylic acid—1. In the keeping of milk; 2. the separation of the cream; 3. the keeping of butter; 4. the preparation of cheese with ordinary rennet. The writers came to the conclusion that borax offers the same advantages as salicylic acid, and is more easy of employment in consequence of its being cheaper than that agent.

Coagulation of the Blood by Carbonic Acid.—MM. E. Matthieu and V. Urbain presented a fresh note on this subject. M. Glénard, at the meeting of November 15, 1875, wished to show that carbonic acid is inert, because the plasma of the blood remains liquid when the vein is plunged into carbonic acid. The writers noted that carbonic acid passes but slowly through the walls of the vessels, and that a high temperature or a considerable time is necessary to obtain the coagulation of the blood in this way

They specially brought against M. Glénard the following experiments. A certain quantity of blood, as it leaves the vessels of a dog, is received into the stomach of a fowl properly prepared. This is shaken during five minutes, so as to allow by exosmosis the exit of the chief part of the carbonic acid. Finally, the blood is divided into two glasses; the first is traversed by a current of air or any other neutral gas; a current of carbonic acid passes through the second. This latter is coagulated in a few seconds, the temperature of the medium being 95° Fahr., whilst in the first the blood remains completely liquid. A similar experiment may be made with plasma, by receiving some horse's blood, as it leaves the vessel, in glass tubes of which the diameter does not exceed two centimètres, and which are plunged into ice; coagulation does not ensue; at the end of a certain time a completely colourless plasma may be collected from these tubes. If a current of air deprived of carbonic acid be passed through this plasma, diluted with at least five times its volume of water and kept at 32° Fahr., it is possible to deprive it of the largest part of its acid gas; after that it may be brought back to the ambient temperature without there being coagulation, but this occurs when carbonic acid is brought into contact with the liquid.

March 6. *Antiseptic Properties of Madder Root.*—M. de Restaing read a note on the antiseptic properties of madder root. A specimen of meat had been preserved from July 27, 1875, to February 27, 1876, in a jar containing powdered madder, which was opened a dozen times to verify the results obtained. The weight of the meat had decreased from 119 to 25 grammes, without any smell or any development of living organisms having shown themselves. From these experiments, the author thought it would be advisable to institute similar trials for the preservation of dead bodies; perhaps by this method means might be found of conciliating the presence of cemeteries in the vicinity of great cities with the sanitary conditions which now so greatly occupy public attention.

Calorific Action of certain Regions of the Brain (the vaso-motor systems situated at the surface of the hemispheres).—The summarised results of the experiments made by MM. Eulenburg and Landois were the following.—1. The destruction of certain anterior cortical regions of the brain is followed by a very considerable augmentation of temperature in the extremities of the opposite side. This increase shows itself immediately, even before the wakening of chloroformed animals and before the performance of any spontaneous movements; it may amount to 5° or 7° Cent. (about 9° or 12° Fahr.) It is also observed that it shows itself more clearly, sometimes in the fore, sometimes in the hind, paw; the result depends specially on the situation and the extent of the portion destroyed, as well as on the relative importance of the destruction. 2. The active calorific region of the cortical surface, specially comprises the posterior and lateral part of that great uniform convolution, answering in the dog to the anterior central fold in man and apes (post-frontal convolution of Owen). The regions acting on the anterior and posterior limbs are separated from each other. The former is situated slightly forward and at the side. The superficial destruction of the folds situated in front has no heating effect, or this effect is very weak, and probably secondary. In the same way, destruction of the posterior and occipital pos-

terior convolutions is not followed by any calorific effect in the limbs in question. 3. After the destructions followed by successful results, disturbances of motility and of muscular sense in the extremities of the opposite side are mostly observed when the chloroformed animals regain consciousness; these disturbances apparently depend on the lesion of the motor apparatus situated in the same region of the hemispheric surface. 4. The increase of temperature in the opposite limbs is generally kept up some time after the lesion, although gradual and very decided differences of that kind, from two days to several weeks, exist. 5. The isolated electric excitation of the cortical region in question, performed with rather weak currents, is followed by a very weak and very evanescent lowering of the temperature, though easily appreciable by the thermo-electric method, in the extremities of the opposite side. This lowering, which varies from 0.2° to 0.6° Cent., is equally produced on curarised and non-curarised animals; it is therefore independent of the motor action of the irritant. 6. Irritation and the destruction of the spinal marrow (lumbar region) and the peripheric trunks (sciatic nerve), performed at a somewhat long interval after the destruction of the above-named regions of the brain, and the re-establishment of the uniformity of the temperature, still act in the usual manner on the temperature of the posterior extremities.

Biliary Salts.—MM. Feltz and Ritter presented another note on the biliary salts, concerning their action on the pulse, tension, respiration, and temperature. By injecting natural bile into the blood in non-poisonous quantities, they found that the pulse diminished in frequency, that respiration slackened, and that temperature and arterial tension fell. Injections of the different colouring matters of the bile and of ethereal solutions of cholesterine did not produce the same effect, whilst the biliary salts acted like natural bile. The biliary salts acted principally on the blood, and by its intervention on the muscular system; they modified the corpuscles, and however small might be the quantity of the biliary salts, their injection had the effect of retarding the passage of the blood in the capillaries.—M. Bouillaud remarked that these experiments clearly showed the reason for that slackening of the pulse which he had pointed out in icteric subjects.

March 13. *Chloroform in Cholera.*—M. Desprès presented, in competition for the Bréant prize, a memoir on the use of chloroform in the treatment of cholera.

REVIEWS.

Thérapeutique des Maladies Vénériennes et des Maladies Cutanées. Par M. P. DIDAY et M. A. DOYON. Paris: 1875.

This work consists of two parts, which are so disconnected that they might just as well have been published as separate volumes. The first part, by the well-known Lyons syphilologist, M. Diday, is a comprehensive treatise on the treatment of venereal diseases. It is eminently practical, and does not disdain to descend to minute particulars regarding methods of treating patients, and, what is another thing, their maladies, which an English surgeon would hardly have imagined, and if he had, would certainly not have published. The general practitioner who is called on occasionally to prescribe for

this class of affections, and whose experience is necessarily limited, will find some admirable rules of treatment in this book.

In the section on gonorrhœa, the indications for the administration of copaiba are clearly pointed out. The drug should never be given until the disease is matured; and that the proper time has come is recognised by a peculiar character of the discharge. A drop is taken between the forefinger and thumb, and can be drawn out by the separated fingers into a thread at least a centimètre long. If the drug does not cure after a week's trial, it should be given up for a time.

M. Diday believes in three kinds of syphilitic sore. What is known as the soft sore he designates a *chancrelle*; for the infecting sore he reserves the term *chancre*. A sore produced on a person already syphilitic by inoculation with the true syphilitic virus, he names *chancroïde*. The *chancroïde* has all the characters of the infecting chancre, but there is no affection of the glands; it has the physiognomy, but wants the essence of the chancre. When syphilis is not cured after the secondary stages, it becomes a *diathesis*, and the tertiary symptoms are the manifestations of this diathesis.

Mercury is very lukewarmly recommended, the author believing that the inconvenience and injury connected with the treatment are not often compensated by benefit to the disease. He discusses the question at great length. When he does give mercury, he prefers the proto-iodide to any other form, and condemns mercurial inunctions. He attributes great weight to strengthening remedies, change of air, and the use of mineral waters, as assisting the cure.

M. Diday is a firm believer in syphilitic germs. 'I believe,' he remarks, 'that syphilis results from the presence in the blood of microphytes or microzymes (yet to be discovered). If mercury cures the lesions which exist without being able to prevent their return, it is because, like all parasitides, it destroys these minute essences when they are alive, but can do nothing against them when they are in the state of germs or eggs (*à l'état de germes, d'œufs*). We fear M. Diday is not such a reliable authority on germs as he is on gonorrhœa.

M. Doyon's section on the treatment of skin-diseases is the product of great industry, but does not display much method in selection. The works of German and English dermatologists have been laid under contribution, with a liberality that is unusual with French writers in this department of medicine. The result is an accumulation of details regarding all kinds of remedies, which, to those who read the book for practical guidance, must be very perplexing. Whilst M. Diday's section bears evidence in every page to the observer and man of practical experience, M. Doyon's bears testimony chiefly to his diligence as a compiler. He regards 'scrofula, lymphatism in its different degrees, anæmia, an asthenic or debilitated constitution,' as being obstacles in the cure of many skin diseases. These conditions are amenable to the waters of Uriège, where M. Doyon is *médecin-inspecteur* of the waters.

Lehrbuch der Hautkrankheiten. Von Dr. ISIDOR NEUMANN. 4th edition. Vienna: 1875.

The publication of the earlier editions of this standard work on skin-diseases coincided with the period during which the first edition of Hebra's great

work was out of print; and the increasing fame of the Vienna school of dermatology ensured the success of the only available book, in which its doctrines were expounded. The work itself supplied admirably the want that was felt, being lucid, concise, and practical. It went rapidly through three editions, before the most important volumes of the new edition of Hebra's book appeared. With their appearance, however, Professor Neumann's work had to rest entirely on its own merits, which probably explains the otherwise somewhat obscure sentence in the preface to the fourth edition, in which the author informs us that he had delayed publishing it for a year after the previous one was exhausted, in order to learn with certainty whether his book really supplied a want or owed its reputation to accidental circumstances. Numerous demands taught him that the book still supplied a want, and we believe that the want is really felt. Notwithstanding its increase in size, it is still much smaller than Hebra's classical work, and a shorter book has always the advantage over a long one. Its intrinsic merits are such as to place it among the best text-books of skin-diseases which exist in any language; and the care with which the present edition has been brought up to the most recent advances in dermatology, must secure for it the attention of all who are interested in that branch of medicine. It contains ten additional woodcuts, illustrating the pathological histology of the skin. These woodcuts have formed a special feature of Dr. Neumann's book, although we can hardly say the most satisfactory one.

The 'cell-infiltration' and 'cell-growth along the vessels,' which, with figures intending to illustrate this condition, are repeated frequently in the earlier editions, as explaining the pathology of many very different skin-diseases, are not definite enough to convey any accurate idea of a characteristic pathological condition. The woodcuts added in the present edition are more instructive than the previous series. Some, especially those illustrating the pathology of the acne which in some cases follows the use of bromide of potassium, are of great interest. Amongst the new ones, we may mention one illustrating the changes which were seen in a section from the axilla in a case of pemphigus, the most conspicuous features being the usual cell-exudation and much enlarged sweat-glands. We doubt whether, in regard to the latter, Dr. Neumann has sufficiently borne in mind the fact that in the axilla, when the skin is normal, the sweat-glands are of enormous size. Scleroderma and ichthyosis find also additional illustration.

The investigations regarding the bromide eruption show that the glands of the skin are specially affected, whence it is inferred that they excrete bromide of potassium when it is taken internally, and are consequently liable to inflammation of their special cellular structures.

The very valuable chapter on the vegetable parasites of the skin is enriched by four woodcuts representing different stages of the Achorion Schönleini, in different stages of cultivation.

The author describes in this edition, for the first time, a disease which, he believes, has hitherto escaped the attention of observers. He gives it the name of *dermatitis circumscripta herpetiformis*, and considers it to be a special circumscribed form of inflammation, affecting the papillary layer of the cutis, and specially connected with changes in the sweat-glands. He has observed nine cases of this disease, whilst Hebra

has, he remarks, only observed one, and that one we do not find has been acknowledged by Hebra as being an instance of a specific disease. Since Dr. Neumann has within a comparatively brief period seen nine cases, the disease cannot be rare; and if he be correct in his diagnosis, not only Hebra, but all other dermatologists, have overlooked a not uncommon and characteristic malady.

We trust that this new and improved edition will meet with the appreciation it deserves, and that Dr. Neumann will never again think it necessary to submit the question of its inherent value to artificial tests.

Leprosy in Jerusalem. — Mittheilungen aus den Leprösen Hütten (Biut el Massakin) in Jerusalem. Von Dr. LONDON, in Carlsbad.

Dr. London, formerly of the Rothschild Hospital at Jerusalem, proposes at a future time to publish his remarks on leprosy as seen in Judea; his present paper is short. He gives a detailed history of a very complete case of leprosy, in which at one time or other all the symptoms of the two commonly recognised forms of the disease occurred. The case ran through the stages of anæsthesia, muscular atrophy, contraction of the extremities, eruptions of pemphigus-like bullæ, production of tubercle, loss of phalanges, sloughing of nasal cavity, etc. The disease was not in this case hereditary; it could not be traced to infection, or to any especial poverty of living.

Dr. London often observed palpable enlargements along the ulnar nerve, and he frequently examined under the microscope portions of skin, and of cellular and of nervous tissue. He found small round cells containing granules, sometimes isolated, but more frequently grouped together; also larger round granules and spindle-shaped elementary tissue, and occasionally an intercellular substance, which, when treated with acetic acid, became granular. These cells he thought to closely resemble morphologically the inflammatory proliferation of cellular tissue, but it differed from it in its mode of aggregation, and in its remaining longer in the border-land between organisation and decomposition.

The leprosy spots appeared symmetrically on the body, first attacking the skin, and afterwards extending to the mucous membranes.

Dr. London considers leprosy to be a deep-rooted disturbance of the whole nutrition of the system; it is certainly not contagious, whereas it is as certainly hereditary, and can be traced in families, sometimes passing over one generation, and re-appearing in the next.

Dr. London was struck with the fact that the districts which produced most malarious fever produced also most cases of leprosy.

He found no mode of treatment specially successful, and was inclined to think that in some cases, where the local symptoms were ameliorated by treatment, the general condition of the patient became rather worse. The leper-huts at Jerusalem are entirely neglected by government; many of them have fallen in, and they are not fit to afford shelter to dogs. There are often more than thirty lepers wearing out a sort of troglodyte life in them, and ending their days by diarrhœa or Bright's disease, or by suffocation owing to the leprosy infiltration reaching the larynx.

J. MACPHERSON, M.D.

Transactions of the Obstetrical Society of London. Vol. XVII. For the year 1875. London: Longmans & Co.

The present volume is one not only of unusual size, but also of unusual interest, containing as it does a *verbatim* report of the prolonged discussion on puerperal fever, which extended over four meetings, and embodies the experience of many of our leading authorities, occupying over 150 pages.

The subject at the time attracted much attention, not only among obstetric physicians, but also among the large body of general practitioners, who are at any time liable to encounter an epidemic of this terrible malady, and whom it therefore behoves to be conversant with the experience of those who have witnessed its ravages, or have given attention to the subject.

The table of contents indicates an evidently healthy state of activity of the society; the communications being of varied and practical interest. Among the more prominent may be noted 'Report of Three Cases of Cephalotripsy,' by Dr. J. Braxton Hicks; 'The Treatment of Rigid Perinæum,' by Mr. Ernest Trestrail; 'Case of Extra-uterine Fibroid,' removed successfully by gastrotomy, weighing 17½ lbs., by Dr. Routh; 'Intramural Calcareous Tumour impeding Labour,' by Dr. A. Wynn Williams; 'Removal of Large Colloid Tumours of the Omentum by Gastrotomy,' by Dr. R. Barnes; 'Cases of General Dropsy in the Fœtus,' by Mr. Lawson Tait, Dr. P. Smith, and Mr. Ashburton Thompson; 'Case of Hydatidiform Mole,' by Dr. John Williams; 'Note on the Treatment of Chlorosis and Anæmia with the Phosphide of Zinc,' by Mr. Ashburton Thompson; 'On Prolapse of the Funis during Labour,' by Dr. G. Roper; 'Case of Epithelioma of the Cervix Uteri complicating Labour,' by Dr. Edis; 'Cases of Ruptured Vagina during Labour,' by Drs. Heywood Smith and Wiltshire; 'Note on the post mortem Diagnosis of Multiparous Uterus,' by Dr. Meadows; and other communications too numerous to mention.

There are several plates and woodcuts to illustrate the text, many of them coloured, and well executed.

The catalogue of the library and museum, comprising over 150 pages, is bound up with the present volume, and will doubtless prove a welcome addition.

The volume in every respect does credit to the Society, and to those who have edited it.

Consumption: Its Treatment by Climate, with reference specially to the Health Resorts of the South African Colonies. By J. A. ROSS, M.D. 1876.

This little work is evidently the grateful offering of one who has derived much benefit from a trip to and residence in, the South African colonies, and is at the same time an attempt to review the whole subject of climate in reference to consumption.

In the former aspect the book deserves much commendation, as containing some good information derived from personal experience and conveyed in a pleasant form. In the latter, the author has succeeded in collecting much material, but has failed in digesting it properly and in drawing careful deductions. Dr. Ross lays great stress on the value of the voyage to and from the Cape, and remarks, we think justly, that while it includes all the best part of the voyage to Australia, it excludes the dangers to which the invalid is exposed in rounding Cape Horn

on the return trip. Dr. Ross visited in succession Cape Town, Port Elizabeth, Grahamstown, and, passing the Katberg range, halted at Queenstown and Dordrecht, and thence proceeded to Bloemfontein and the diamond fields. He made careful inquiries at these places, and found that consumption existed in all, not only among the visitors or recent emigrants, but as a disease developing itself in the settlers after many years' residence. Among these latter, however, it is not common, though an interesting case of considerable standing is adduced; but in the coloured population the mortality from this cause, as shown at the Albany Hospital, Grahamstown, is high.

The Cape physicians, it appears, from an early period have placed their faith in the treatment of phthisis by open air life at a high elevation; and results, Dr. Ross says, have confirmed the wisdom of this practice. Outlines of cases apparently cured by the climates of the elevated stations are given; one of special interest, from the careful report of two eminent physicians of the patient's state before he left London, and the result of Dr. Ross's examination some years later. The patient had quitted England with extensive tubercular consolidation of both lungs, and some laryngeal mischief, forbidden to marry, and with a gloomy prospect before him. He completely recovered, married, has a large and healthy family, and is active and able for a considerable amount of close office work. The principal sanatoria recommended are Aliwal North, at an elevation of 3,000 feet, Cradock (3,000 feet), and Bloemfontein (5,000 feet), all well situated, and enjoying a dry soil, abundant sunshine, and a clear exhilarating atmosphere. At the latter place, the capital of the Orange Tree State, a certain amount of civilisation prevails, and comforts are to be had, with the prospect of a sanatorium being established for consumptives. Many of these might object to the somewhat rough journey from the coast in remarkable vehicles called Cobb's coaches, or in tent-waggons; but our author assures us that even the weaker invalids reap benefit from travelling slowly in a bullock-wagon for days together, and sleeping in it at night. Thus open air by night and day in this exhilarating climate is insured. Pleuropneumonia has prevailed lately among the Dordrecht cattle, and Dr. Ross gives an account of the practice of inoculation in vogue. 'The diseased lung of a dead animal is placed in a vessel, and tapes are immersed in the liquid draining from it. These are passed through the tails of the young cattle; severe inflammation sets in, and the tails occasionally drop off. Thus was explained the Manx-cat-like appearance of many of the oxen.' As we said before, the author's experiences of Africa (especially of the ostrich farms) are entertaining, and far preferable to his opinions on the climate question generally. He tries to build too much on the phthisis death-rates of the British army in different colonies, and contends that it is a fair inference that a climate that does not favour the development of phthisis will exercise a favourable influence on the already phthisical patient, a conclusion by no means proved, and opposed to Dr. Ross's own evidence about the Cape sanatoria. Also change of climate is only advised for cases of non-tubercular phthisis, the author alluding to Niemeyer's opinion, that, if a consumptive patient is known to have tubercles, he had better not be sent away from home, but die there in peace among his friends. We question, after the debate on tubercle at

the Pathological Society, whether anybody is prepared to closely distinguish between tubercular and non-tubercular cases; and we are prepared to affirm that in by far the majority of *post mortem* examinations of cases of phthisis tubercle is detected, as a reference to the records of any large consumption hospital will show. Such being the case, surely it would be unwise to debar the greater number of consumptives from the benefits of climate, because they are suspected of tubercle, though it may be a limited amount, and likely to remain dormant for years. Dr. Ross's book contains some good references, and is on the whole very readable.

C. THEODORE WILLIAMS, M.D.

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RECENT GERMAN BOOKS.

Published by August Hirschwald, Berlin.

- Andresen, San.-Rath Dr. J., Die Wasserkur in ihrer Stellung zur Heilkraft des Organismus und zur ärztlichen Kunst. 8gr. 1875.
- Binz, Prof. Dr. C., Das Chinin. Nach den neuern pharmakologischen Arbeiten dargestellt. 8gr. 1875.
- Böhr, Dr. M., Instruction für wissenschaftliche Reisende zur Diagnose und Behandlung der häufigsten Krankheiten, besonders der endemischen Malaria-Processen und Infectionen, sowie über die allgemeinen Grundsätze der Wundbehandlung. 8gr. Zweite Auflage. 1875.
- Eulenburg, Prof. Dr. Alb., Die hypodermatische Injection der Arzneimittel. Nach physiologischen Versuchen und klinischen Erfahrungen bearbeitet. Dritte Auflage. 8gr. Mit 1 lithogr. Tafel. 1875.
- Garlach, Geh. Med.-Rath A. C., Die Fleischkost des Menschen vom sanitären und marktpolizeilichen Standpunkte. 8gr. 1875.
- Gurlt, Prof. Dr. E., Die Kriegs-Chirurgie der letzten 150 Jahre in Preussen. Rede. 8gr. 1875.
- Haussmann, Dr. D., Ueber die Entstehung der übertragbaren Krankheiten des Wochenbettes. Versuche und Beobachtungen. 8gr. Mit Holzschnitten. 1875.
- Jerusalimsky, Dr. N., Ueber die physiologische Wirkung des Chinin. 8gr. 1875.
- König, Prof. Dr. Fr., Lehrbuch der speciellen Chirurgie für Aerzte und Studierende. In zwei Bänden. 8gr. Bd. I. Mit 81 Holzschnitten. 1875. 14 Mark. — Bd. II. I. Abth. Mit 48 Holzschnitten. 1876.
- Krönlein, Docent Dr. R. U., Offene und antiseptische Wundbehandlung. Eine sachliche Entgegnung auf persönliche Angriffe. 8gr. 1876.
- Von Niemeyer, Prof. Dr. F., Lehrbuch der speciellen Pathologie und Therapie, mit besonderer Rücksicht auf Physiologie und pathologische Anatomie neu bearbeitet von Prof. Dr. E. Seitz in Giessen. Neunte veränderte und vermehrte Auflage. Zwei Bände. 8gr. I. Bd. 1. Abth. I. Bd. 2. Abth. 1875. II. Bd. 1. Abth. 8gr. 1876. (II. Bd. 2. Abth., Schluss des Werkes ist unter der Presse.)
- Prager, Ober-Stabsarzt Dr. C. J., Das Preussische Militair-Medicinal-Wesen in systematischer Darstellung bearbeitet. Zweite völlig umgearbeitete Auflage. Lex.-8. Zwei Bände. 1875.
- Regulativ für das Verfahren der Gerichtsärzte bei den gerichtlichen Untersuchungen menschlicher Leichname. Herausgegeben von der königl. wissenschaftlichen Deputation für das Medicinalwesen. 8gr. 1875.
- Rothe, Dr. C. G., Die Carbonsäure in der Medicin. 8gr. 1875.
- Sachs, Dr., Ueber die Hepatitis der heissen Länder, die darnach sich entwickelnden Leber-Abscesse und deren operative Behandlung. (Separatabdrukke d. Archiv. f. klinische Chirurgie.) 8gr. 1876.
- Schultze, Prof. Dr. B. S., Ueber die pathologische Antelexion der Gebärmutter und die Parametritis posterior. Mit Vorbemerkungen über die normale Lage der Gebärmutter. 8gr. Mit 20 Holzschnitten. 1875.
- Schweigger, Prof. Dr. C., Handbuch der speciellen Augenheilkunde. Dritte Auflage. 8gr. Mit 47 Holzschnitten. 1875.
- Seegen, Prof. Dr. J., Der Diabetes mellitus auf Grundlage zahlreicher Beobachtungen dargestellt. 8gr. Zweite vermehrte Auflage. 1875.
- Virchow, Geh. M.-Rath Prof. Dr. Rud., Die Sections-Technik im Leichenhause des Charité-Krankenhauses mit besonderer Rücksicht auf gerichtsarztliche Praxis erörtert. Erweiterter Abdruck aus dem ersten Jahrgange der Charité-Annalen. Im Anhang: Das Regulativ für das Verfahren der Gerichts-

ärzte bei gerichtlichen Untersuchungen menschlicher Leichen. 8gr. Mit 1 lithogr. Tafel. 1876.
 Waldenburg, Prof. Dr. L., Die pneumatische Behandlung der Respirations- und Circulationskrankheiten im Anschluss an die Pneumatometrie, Spirometrie und Brustmessung. 8gr. Mit 30 Holzschnitten. 1875.
 Wegscheider, Dr. H., Ueber die normale Verdauung bei Säuglingen. 8gr. 1875.

MISCELLANY.

THE number of students registered in the Paris Faculty of Medicine this year is 6,500, the largest number yet reached. On February 22, the Municipal Council of Paris voted a sum of six millions of francs for the construction of new buildings round the old ones belonging to the Faculty. The property of the buildings now in existence has been given up by the State to the city of Paris, on the express condition that they should always be devoted to the Faculty of Medicine.

MEDICAL ADVERTISING IN CENTRAL AFRICA.—Lieutenant Cameron in the course of his description of his journey across Africa, delivered at the Royal Geographical Institution, told his audience that having at last reached the shore of the lakes, he had the opportunity of seeing a sort of congress of native doctors, who went about each with a row of iron bells hung over his loins, which he kept perpetually ringing to attract patients. With a sly touch of satire, the explorer remarks that, like doctors elsewhere, those eminent physicians were very solicitous about their fees.

INFANT MORTALITY IN EGYPT.—The following passage is extracted from an article in the *Times* on the Egyptian Fellahen. The author says, 'The philosopher who deemed him happiest who has the fewest wants ought to have been an Egyptian fellah. He is sometimes even born in the fields. The women work up to the day of their confinement. They lie up one day, and are out again the next, and the baby is laid near them in the fields on a bit of sacking. Ignorance and poverty lead to other sad consequences. Premature old age comes on at 40, and the population is kept down by a terrible infant mortality. Out of the 140,000 annual deaths, 80,000 are of infant children. It has been calculated that three out of every five that are born die before the age of two. For those that survive, an old Egyptian custom that is still practised is most symbolical of their future. The child is put into a sieve and rolled about to the beating of drums. "It is in order to harden him," say the people.'

INTEMPERANCE AND DIPSO MANIA AS RELATED TO INSANITY.—Dr. Edward C. Mann, Medical Superintendent of the State Emigrant Insane Asylum, Ward's Island, New York, in an article bearing the above title, published in the current number of the *Journal of Psychological Medicine* gives it as his opinion, that it is impossible to estimate the complex influences exerted by intemperance upon the production of insanity. Many superintendents of foreign asylums have estimated the admissions from intemperance at twenty-five per cent. or higher, including not only the proximate, but the remote cause of the disease. Dr. Mann states that he has traced intemperance as a cause in almost every case of general paralysis that has fallen under his notice, and that others have observed the same thing. M. Lunier estimates that fifty per cent. of all the idiots and imbeciles to be found in the large cities of Europe have had parents who were notorious drunkards. Out of 350 insane patients admitted during two years at Charenton, insanity was attributed to drink in 102 instances. Dr. Mann arrives at the conclusion from his examination of the statistics of all the insane asylums both here and in Europe, that it is not too much to say that fully one fourth of all the admissions are due either proximately or remotely to intemperance.

EFFECT OF EXTREME COLD ON MIND AND BODY.—M. Payer, the eminent Arctic explorer, referring to a certain day on which the thermometer indicated 58° Fahr. below zero, says that so great an amount of cold paralyses the will, and that, under its influence, men, from the unsteadiness of their gait, their stammering talk, and the slowness of their mental operations, seem as if they were intoxicated. Another effect of such cold, mentioned by M. Payer, is a tormenting thirst, which is due to the evaporation of the moisture of the body. It is unwholesome, too, to use snow to quench the thirst, as it brings on inflammation of the throat, palate, and tongue; besides, a temperature of 35½° to 58° Fahr. below zero makes it taste like molten metal. Snow-eaters in the North are considered as feeble and effeminate, in the same way as is an opium-eater in the East.

THE MEDICAL CONGRESS AT SEVILLE.—The *Cronica Oftalmologica* contains an account of the late Medical Congress at Seville; the first meeting of the kind which has ever been held in Spain. The most remarkable papers read were on the mineral waters of Andalusia, and their application to the treatment of skin-diseases; on pulmonary phthisis in Andalusia; on hæmatozoa as indications of certain pathological conditions; on the nature and treatment of puerperal fever; on renal and vesical calculi; on subperiosteal resections of the upper extremities; on cancer; on acupuncture as a means for the diagnosis and treatment of diseases of the mammary gland; on septicæmia; on the treatment of lachrymal fistulæ by cauterisation of the sac; and remarks on scurvy and alcohol dressings. The number and variety of the subjects treated must have given interest to this first gathering of our Spanish professional brethren, and is of hopeful augury for the congress to be held at Granada next year.

THE JOHN HOPKINS UNIVERSITY.—The inauguration of the John Hopkins University, Baltimore, took place on February 23; a large assemblage was present, including many visitors from the universities of America. The salutatory address was delivered by President Eliot, of Harvard University, whose finished oratory and beautiful writing were decidedly the event of the day. President Gilman responded in a long address, explaining the plans to be adopted in the organisation of the different departments. It is proposed to follow, to a certain extent, the German University system, borrowing some ideas from the French also. With reference to the sciences of medicine and biology, he thought that it was imperative that some vigorous steps be taken, in consideration of the facts that provisions in America for medical instruction cannot compare with those of European universities; that the medical schools have been inadequately endowed; that the system of fees for tuition has led to great abuses; that in some of the best colleges the degree of doctor of medicine can be won in half the time required for the degree of bachelor of arts; that there is a disposition to treat American diplomas as blank paper by civilians at home and by the professions abroad; that ignorance and quackery vaunting diplomas are prevalent, and that medical degrees conferred by a bogus university are openly sold like patent pills. Then, turning to the other side of the picture, when we see what admirable teachers have given instruction among us in medicine and surgery, what noble hospitals have been erected, what marvellous discoveries in surgery have been made by our countrymen, what ingenious instruments they have contrived, what humane and skillful appliances they have provided on the battle-field, what measures are in progress for advance in hygiene and the promotion of public health; when we see what success has attended recent efforts to reform the system of medical education, we need not fear that the day is far distant. We may rather rejoice that the morning has dawned which shall see endowments for medical science as munificent as those now provided for any branch of learning, and schools as good as those which exist in any other land. It will doubtless

be some time after the opening of the University before the opening of the hospital, and this interval may be spent in forming plans for the department of medicine. President Gilman urged the importance of instruction antecedent to the study of medicine; such instruction is avoided by students ordinarily, as a glance at the catalogue will prove. He advocated a course similar to that begun at the Sheffield School, New Haven, but more extended. Such a course should include abundant practice in the laboratories of chemistry, zoology, and physics; the study of anatomy, physiology, and palæontology, and of the lower forms of life; the investigation of the principles of drainage and ventilation, and of climatic or meteorological laws; the geography of diseases, with the remedial agencies of nature. President Gilman advocated such facilities as are now afforded, for instance, by Huxley in London, Rolleston at Oxford, Foster at Cambridge, Leukart, Kolbe, and His at Leipzig, Hoffmann and Reichert at Berlin. It is proposed to make the medical department independent of students' fees, thus avoiding the temptation to bestow diplomas upon unworthy candidates. The fund is ample for this, nearly eight millions being bequeathed, to be distributed as follows, 3,500,000 dols. for the University, 3,500,000 dols. for the hospital, and the balance to local institutions of education and charity.

ROYAL INSTITUTION.—The annual meeting of the members of the Royal Institution took place on May 1, Mr. George Busk, F.R.C.S., F.R.S., in the absence of the President, the Duke of Northumberland, D.C.L., in the chair. The annual report of the Committee of Visitors testified to the continued prosperity and efficient management of the institution during the past year. Fifty-six new members had been elected, and sixty-one lectures and nineteen evening discourses had been delivered. The library had so far grown that 323 volumes, exclusive of periodicals, had been added, about one-half having been presented to the institution. Thanks were voted to the president, treasurer, secretary, the committees of managers and visitors, and the professors for their services during the past year, a special compliment being paid to Dr. Spottiswoode, the secretary, for his gratuitous course of four lectures on 'Polarised Light,' in March and April last. The election of officers for the present year was then proceeded with, after which the chairman, in the name of the members of the institution, presented a silver salver, and a purse containing 300 guineas, to Professor Tyndall, F.R.S., as a congratulatory testimonial *à propos* of his recent marriage. In returning thanks, the professor said he hoped the members would, at a future time, allow him to 'render an account' of the way in which he disposed of the money portion of the testimonial. In connection with the institution, and also in other directions, he had devoted his energies to the acquisition and diffusion of scientific knowledge, and incidentally to these labours his income had increased sufficiently for his personal requirements, and he therefore trusted that he should be left at liberty to expend the sum alluded to in such a manner as he hoped would meet with the approbation of the kind donors. There had been, he went on to say, a time when the diffusion of science among the people of England depended almost entirely upon individual effort, and though Government had since generously come forward with its aid, it was not upon State efforts that we had to place our main dependence so much as upon the sound steady work of institutions like their own. We had, it was true, in this country vastly fewer scientific educational institutions than existed in France and Germany. He felt, nevertheless, that the educational problem would eventually be more effectually solved in England than in any other country upon the earth. He would not detain the meeting further than to once more tender his earnest and hearty thanks for the very generous conduct shown towards him.

LEPROSY.—According to Dr. Vandyke Carter's lately published reports on Leprosy, it appears that it is a disease of a slowly contagious character and naturally of very pro-

tracted duration, lasting from eight or nine to fifteen or twenty years, and that it is chiefly prevalent among the poorer classes, and especially among such as subsist upon scanty or unwholesome food. In many of its forms it reveals itself by some disfigurement of the features, so that it is readily recognised by ordinary observers, and its slow progress is attended by loathsome sores and by loss of the fingers and toes, which gradually perish and drop off. As in Judæa, it is the custom of the country—at least, among the poor, who furnish the great majority of the cases—to expel lepers from their homes and from society as soon as the nature of their complaint is discovered, and to look upon it as a valid ground for the disruption of all domestic ties. The husband drives away his wife, or the father his children, and takes no further thought for their welfare or subsistence. They become outcasts, exposed to all inclemencies of weather and to all extremities of want, and supported, if such a word can be used, by food or money which is exposed for them by the charitable, and which they may only take after the giver has departed, or by such roots and natural produce as they can obtain for themselves in the jungles. In Bombay there are two establishments into which lepers are received—one of them the Dhurmsala, named after the late Sir Jamsetjee Jeejeebhoy; the other the ward for incurables which is attached to the Sir Jamsetjee Jeejeebhoy Hospital. The latter not only contains 30 male lepers, but provides them with proper hospital accommodation and careful medical treatment; while the Dhurmsala contains 120 lepers of both sexes, who are better off than they would be as wandering outcasts, but who are crowded together in defiance of all hygienic considerations. In order properly to estimate the relation between the evil and the provision thus made for its relief it must be remembered that the known lepers in the Bombay Presidency exceeded 11,000 in number in 1871, and that the number in the whole Indian peninsula is supposed to be not less than 100,000. Their condition may be fairly estimated from a narrative extracted from a letter in the *Times of India* for June 18. The writer says of a leper man whom he had lately seen: 'He was the servant of a Brahmin landowner in the Concan, and, while present at a marriage festival, was noticed to have some (leprous) thickening of the ears and face. Thereupon the people insisted on his leaving the village; his wife and child left him, and he took refuge in a reed hut once belonging to some wandering tribe of Katodies. At morn and even he ventured near the outlying dwellings to beg a little food. He ate such fruit as was procurable, and, possessing as his all the sum of eight annas, he expended that in buying from the young cowherds fragments of their meals. Finally, he left the locality and reached Bombay. Contrary to what is usual, this man was in fair bodily condition and able to work, but no one in Bombay would employ him.'

INTERNATIONAL MEDICAL CONGRESS, PHILADELPHIA, 1876.—The International Medical Congress will be formally opened at noon, on Monday, September 4, 1876, in the University of Pennsylvania. The following addresses will be delivered before the congress in general meeting:—Address on Medicine, by Austin Flint, M.D., Professor of Practice of Medicine in Bellevue Hospital Medical College, New York. Address on Hygiene and Preventive Medicine, by Henry I. Bowditch, M.D., President of State Board of Health of Massachusetts. Address on Surgery, by Paul F. Eve, M.D., Professor of Operative and Clinical Surgery in the University of Nashville. Address on Obstetrics, by Theophilus Parvin, M.D., Professor of Obstetrics in the College of Physicians and Surgeons of Indiana. Address on Medical Chemistry and Toxicology, by Theodore G. Wormley, M.D., Professor of Chemistry in Starling Medical College, Columbus, Ohio. Address on Medical Biography, by J. M. Toner, M.D., of Washington. Address by Dr. Hermann Lebert, Professor of Clinical Medicine in the University of Breslau. Address on Medical Education and Medical Institutions, by Nathan S. Davis, M.D., Professor of Principles and Practice of Medicine in Chicago Medical College. Address on Medical Literature,

by Lunsford P. Yandell, M.D., late Professor of Physiology in the University of Louisville. Address on Mental Hygiene, by John P. Gray, M.D., Superintendent and Physician to the New York State Lunatic Asylum, Utica, New York. Address on Medical Jurisprudence, by Stanford E. Chaillé, M.D., Professor of Physiology and Pathological Anatomy in the University of Louisiana.

Discussions on scientific subjects will be opened in the sections as follows:—*Section I. Medicine.*—1. Typhomalarial Fever; is it a Special Type of Fever? Reporter, J. J. Woodward, M.D., Assistant-Surgeon U.S. Army. 2. Are Diphtheritic and Pseudo-membranous Croup Identical or Distinct Affections? Reporter, J. Lewis Smith, M.D., Physician to the New York Infants' Hospital. 3. Do the Conditions of Modern Life favour specially the Development of Nervous Diseases? Reporter, Roberts Bartholow, M.D., Professor of the Theory and Practice of Medicine in the Medical College of Ohio. 4. The Influence of High Altitudes on the Progress of Phthisis. Reporter, Charles Denison, M.D., of Denver, Colorado. *Section II. Biology.*—1. Microscopy of the Blood. Reporter, Christopher Johnston, M.D., Professor of Surgery in the University of Maryland. 2. The Excretory Function of the Liver. Reporter, Austin Flint, jun., M.D., Professor of Physiology in the Bellevue Hospital Medical College, New York. 3. Pathological Histology of Cancer. Reporter, J. W. S. Arnold, M.D., Professor of Physiology in the University of the City of New York. 4. The Mechanism of Joints. Reporter, Harrison Allen, M.D., Professor of Comparative Anatomy in the University of Pennsylvania. *Section III. Surgery.*—1. Antiseptic Surgery. Reporter, John T. Hodgen, M.D., Professor of Surgical Anatomy and of Clinical Surgery in the St. Louis Medical College. 2. Medical and Surgical Treatment of Aneurism. Reporter, William H. Van Buren, M.D., Professor of the Principles and Practice of Surgery and of Clinical Surgery in the Bellevue Hospital Medical College, New York. 3. Treatment of Coxalgia. Reporter, Lewis A. Sayre, M.D., Professor of Orthopædic Surgery and of Clinical Surgery in the Bellevue Medical College, New York. 4. The Causes and the Geographical Distribution of Calculous Diseases. Reporter, Claudius H. Mastin, M.D., of Mobile, Alabama. *Section IV. Dermatology and Syphilology.*—1. Variations in Type and in Prevalence of Diseases of the Skin in Different Countries of Equal Civilisation. Reporter, James C. White, M.D., Professor of Dermatology in Harvard University. 2. Are Eczema and Psoriasis Local Diseases, or are they Manifestations of Constitutional Disorders? Reporter, Lucius Duncan Bulkley, M.D., of New York. 3. The Virus of Venereal Sores; its Unity or Duality. Reporter, Freeman J. Bumstead, M.D., late Professor of Venereal Diseases at College of Physicians and Surgeons, New York. 4. The Treatment of Syphilis with Special Reference to the Constitutional Remedies appropriate to its various Stages; the Duration of their Use, and the Question of their Continuous or Intermittent Employment. Reporter, E. L. Keyes, M.D., Adjutant Professor of Surgery and Professor of Dermatology in Bellevue Hospital Medical College, New York. *Section V. Obstetrics.*—1. The Causes and the Treatment of Non-puerperal Hemorrhages of the Womb. Reporter, William H. Byford, M.D., Professor of Obstetrics and Diseases of Women and Children in the Chicago Medical College. 2. The Mechanism of Natural and of Artificial Labour in Narrow Pelves. Reporter, William Goodell, M.D., Clinical Professor of Diseases of Women and of Children in the University of Pennsylvania. 3. The Treatment of Fibroid Tumours of the Uterus. Reporter, Washington L. Atlee, M.D., of Philadelphia. 4. The Nature, Causes, and Prevention of Puerperal Fever. Reporter, William T. Lusk, M.D., Professor of Obstetrics and Diseases of Women and Children in Bellevue Hospital Medical College, New York. *Section VI. Ophthalmology.*—1. The Comparative Value of Caustics and of Astringents in the Treatment of Diseases of the Conjunctiva, and the Best Mode of Applying them. Reporter, Henry W.

Williams, M.D., Professor of Ophthalmology in Harvard University. 2. Tumours of the Optic Nerve. Reporter, Hermann Knapp, M.D., of New York. 3. Orbital Aneurismal Disease and Pulsating Exophthalmia; their Diagnosis and Treatment. Reporter, E. Williams, M.D., Professor of Ophthalmology in Miami Medical College of Cincinnati. 4. Are Progressive Myopia and Posterior Staphyloma due to Hereditary Predisposition, or can they be induced by Defects of Refraction, acting through the Influence of the Ciliary Muscle? Reporter, E. G. Loring, M.D., of New York. *Section VII. Otology.*—1. Importance of Treatment of Aural Diseases in their early Stages, especially when arising from the Exanthemata. Reporter, Albert H. Buck, M.D., of New York. 2. What is the Best Mode of Uniform Measurement of Hearing? Reporter, Clarence J. Blake, M.D., Instructor in Otology in Harvard University. 3. In what Percentage of Cases do Artificial Drum-membranes prove of Practical Advantage? Reporter, H. N. Spencer, M.D., of St. Louis. *Section VIII. Sanitary Science.*—1. Disposal and Utilisation of Sewage and Refuse. Reporter, John H. Rauch, M.D., late Sanitary Superintendent of Chicago. 2. Hospital Construction and Ventilation. Reporter, Stephen Smith, M.D., Professor of Orthopædic Surgery in the University of the City of New York. 3. The General Subject of Quarantine with Particular Reference to Cholera and Yellow Fever. Reporter, J. M. Woodworth, M.D., Supervising Surgeon-General U.S. Marine Hospital Service. 4. The Present Condition of the Evidence concerning 'Disease-germs.' Reporter, Thomas E. Satterthwaite, M.D., of New York. *Section IX. Mental Diseases.*—1. The Microscopical Study of the Brain. Reporter, Walter H. Kempster, M.D., Physician and Superintendent of Northern Hospital for Insane, Oshkosh, Wisconsin. 2. Responsibility of the Insane for Criminal Acts. Reporter, Isaac Ray, M.D., of Philadelphia. 3. Simulation of Insanity by the Insane. Reporter, C. H. Hughes, M.D., of St. Louis. 4. The Best Provision for the Chronic Insane. Reporter, C. H. Nichols, M.D., Physician and Superintendent of the Government Hospital for the Insane, Washington.

Gentlemen intending to make communications upon scientific subjects, or to participate in any of the debates, will please notify the Commission before August 1, in order that places may be assigned them on the programme.

In order to facilitate debate there will be published on or about June 1 the outlines of the opening remarks by the several reporters. Copies may be obtained on application to the corresponding secretaries. The volume of transactions will be published as soon as practicable after the adjournment of the Congress. The public dinner of the Congress will be given on Thursday, September 7, at 6.30 P.M. The registration book will be open daily from August 31, from 12 to 3 P.M., in the Hall of the College of Physicians, N.E. corner 13th and Locust Streets. Credentials must in every case be presented. The registration fee (which will not be required from foreign members) has been fixed at ten dollars, and will entitle the member to a copy of the transactions of the Congress. Gentlemen attending the Congress can have their correspondence directed to the care of the College of Physicians of Philadelphia, N.E. corner of Locust and Thirteenth Streets, Philadelphia, Pennsylvania. There is every reason to believe that there will be ample hotel accommodation, at reasonable rates, for all strangers visiting Philadelphia in 1876. Further information may be obtained by addressing the corresponding secretaries. All communications must be addressed to the appropriate secretaries at Philadelphia. The foregoing programme is published by the authority of the Committee of Arrangements of the Centennial Medical Commission. S. D. Gross, President, William B. Atkinson, M.D., 1400, Pine Street, Recording Secretary, William Goodell, M.D., 20th and Hamilton Streets, and Daniel G. Brinton, M.D., 115 S. 7th Street, American Corresponding Secretaries, Richard J. Dunglison, M.D., 814 N. 16th Street, and R. M. Bertolet, 113 S. Broad Street, Foreign Corresponding Secretaries.

The London Medical Record.

Authors of Papers, Theses, &c., will assist in the preparation of summaries by our reporters, by forwarding separate copies of their works.

STRICKER, RIESS, BROADBENT, MACLAGAN, AND OTHERS ON THE USE OF SALICYLIC ACID AND SALICIN IN ACUTE RHEUMATISM.

Among the results obtained from the internal use of salicylic acid, its effects not only as an antipyretic but almost—if the statements already made be supported by further observations—as a curative, in rheumatic fever, are most noteworthy. Several articles on the subject have recently appeared in the German and other periodicals, from which we make the following quotations.

Dr. Stricker writes (*Berliner Klinische Wochenschrift*, nos. 1 and 2, 1876) as follows. For several months, all the cases of acute articular rheumatism in Professor Traube's wards have been treated with salicylic acid. In all the patients thus treated, not only has there been arrest of the increase of temperature within forty-eight hours, generally much sooner, but they have been freed from the local symptoms—swelling, redness, and tenderness of the joints. He regards salicylic acid, apart from its antipyretic action, as the most active, perhaps as a radical, remedy in acute articular rheumatism. He insists on the use of pure salicylic acid, which is in the form of white glistening needles, tasteless, and perfectly soluble in water and alcohol. The irritant action on the mucous membrane of the mouth, œsophagus, and stomach, appears to be due to impurities. Pure salicylic acid can be given in rather large doses without producing any troublesome effects of the kind on the mouth and pharynx, even though it gives rise to dryness of the mucous membrane, followed by slight burning and by increased secretion. He gave pure salicylic acid in hourly doses of $7\frac{1}{2}$ to 15 grains in a wafer, washed down with water like a pill. The doses were continued until the previously affected joints could be moved without pain. To attain this end, sometimes larger, sometimes smaller quantities were required; never more than 15 grammes or less than 5 grammes (225 grains and 75 grains). The only general symptoms produced were diaphoresis, noises in the ears, and difficulty of hearing; in two cases there was abnormal cheerfulness. Sufficient data do not yet exist for determining the action of salicylic acid in arresting or preventing cardiac disease.

Dr. Stricker's observations are based on peculiar cases, of which he relates two under the following headings: 1. Rheumatic polyarthritis; third attack; insufficiency of the aortic valves; complete arrest of the disease in twenty-four hours. 2. Rheumatic polyarthritis; cure within forty-eight hours; recent endocarditis on admission, which remained uninfluenced by the treatment, and led to slight mitral insufficiency; pericarditis, commencing when

the treatment was begun, disappeared under the continued use of salicylic acid. 3. Rheumatic polyarthritis running a slow course, with slight rise of temperature. When the patient was in hospital, rapid swelling and pain of several of the large joints, with increase of local temperature. Cure within forty-eight hours. 4. Rheumatic polyarthritis; strongly marked local affection; cured within twenty-four hours. 5. Rheumatic polyarthritis; two attacks; the first subdued in forty-eight, the other within twenty-four hours.

Riess contributes to the *Berliner Klinische Wochenschrift* (no. 7, 1876) an article on the use of salicylic acid, especially in acute articular rheumatism. He gave it in twenty-seven cases in the Berlin General Hospital; in the first twenty-three as an antipyretic when the temperature reached 102° Fahr. The antipyretic action was almost always very good; the lowering of temperature often lasting a day or even longer. The following were the numbers of doses required to produce complete reduction of the pain:—in six cases, 1 dose; in five cases, 2 doses; in two, 3 doses; in one, 4 doses; in two, 5 doses; in one, 6 doses; in four, 8 doses; in one, 15 doses; and in one, 20 doses. The fall of temperature was usually soon followed by relief of the affection of the joints and general improvement; but this was more constant in the earlier cases. After an improvement for one or nine days, a return of the joint affection with or without increase of temperature was often observed. The time required for complete cure—i.e. removal of the pain, swelling, and stiffness of the joints—was in one case three days; in two, four days; in two, six days; in two, seven days; in two, eight days; in one, eleven days; in one, thirteen days; in two, fourteen days; in one, fifteen days; in two, six weeks; in one, seven weeks; in two, two months; in four, more than two months. Of the last four cases, two were protracted by tedious complications—pericarditis in one, and periostitis of the femur in the other. With the exception of slight endocarditis in some, the remaining cases were uncomplicated.

Riess has lately used, in six cases, salicylic acid in small doses (not exceeding fifteen grammes) in solution of phosphate of soda, as recommended by Stricker. Two of the patients had been already treated by salicylic acid in large doses, but suffered from obstinate relapses, principally in the form of pains and stiffness of the joints. One of the patients took 165 grains of salicylic acid in solution of phosphate of soda in a day and a-half; the other took $4\frac{1}{2}$ drachms in the same way in two days, the doses being given every one or two hours. In both the pains were relieved, but returned when the medicine was discontinued. Of the other four cases, a very favourable result was obtained in one only, and in none of these was any effect produced on the duration of the disease. The disappearance of the symptomatic fever was, however, constant. In one of the four cases, the local symptoms disappeared in three days; in the others, it remained unaffected, although the medicine was given in large doses.

Riess says that in several necropsies of patients to whom salicylic acid had been given in substance, he found traces of its action on the mucous membrane of the œsophagus, stomach, and intestine.

While he points out the great difficulty of arriving at results in the treatment of acute articular rheumatism, he comes to the conclusion that neither his own cases nor those related by Stricker prove that

salicylic acid is a certain remedy in this disease. He formulates his opinion as follows. Salicylic acid acts as an excellent antipyretic in acute articular rheumatism; the reduction of temperature produced by its administration is generally attended with relief of the joint-affection, and it appears that in favourable cases, which come early under treatment, the duration of the disease may be cut short.

Besides the mixture of salicylic acid with solution of phosphate of soda, Riess has used commercial salicylate of soda. A full dose of this is ninety grains (equal to about seventy-five grains of salicylic acid); it is best given in the following form: salicylate of soda, six parts; distilled water, twenty parts; liquorice juice, five parts. This solution is readily taken, and is rarely followed by vomiting.

In a second article on the same subject (*Berliner Klinische Wochenschrift*, February 21, 1876). Dr. Stricker replies to some criticisms by Riess, and formulates the conclusions at which he has arrived in the following words. 1. Salicylic acid appears to be a rapid and radical remedy in recent cases of genuine acute rheumatism of the joints. 2. It is not injurious to the human organism when administered every hour in doses varying from $7\frac{1}{2}$ to 15 grains. 3. It can be given in these doses for a longer time to young and strong individuals than to the old and feeble. 4. In the latter, it produces toxic symptoms more readily than in the former. 5. The toxic symptoms vary in degree. 6. Those most commonly met with are noises in the ears, difficulty of hearing, and diaphoresis; when these occur, the administration of the medicine should be discontinued. 7. If salicylic acid be found to fully answer the expectations entertained regarding it, the internal administration of a certain quantity may be expected to prevent the occurrence of fresh attacks in hitherto unaffected joints, and also secondary inflammation of serous membranes, especially the endocardium. 8. To prevent relapse, the medicine must be continued in smaller doses for some days after the termination of the main treatment. 9. Salicylic acid is of doubtful utility in chronic articular rheumatism. 10. It is not likely to be of use in gonorrhœal or diarrhœal rheumatism, or in the polyarthritis attending septicæmia.

Dr. Katz describes, in no. 4 of the *Deutsche Medicinische Wochenschrift*, a case of acute articular rheumatism successfully treated with salicylic acid. The patient was a man, in whom the fingers, wrists, shoulders, and knees were affected. Nitrate of potash, quinine, and morphia were given for ten days without relief. There was much pain and swelling; the temperature was 102° to 103° Fahr., the pulse 100 to 120. The administration of salicylic acid, in 15 grain doses hourly, was commenced on the tenth evening; and the next morning, a drachm having been taken, he was able to move both his hands freely, and even to move out of bed, neither of which he could do on the previous day. The medicine was continued. In the evening there was no fever, the pulse was 90, the respiration free; motion was not painful, and there was no swelling of the parts. Forty-eight hours after the commencement of the treatment by salicylic acid he was out of bed, and could walk without assistance.

Dr. Hildebrandt describes (*Deutsche Medicinische Wochenschrift*, no. 7, 1876) a case of acute rheumatism in a girl aged eleven. From January 24 to 28 she had circumscribed peritonitis on the right

side, which disappeared under the use of opiates and the application of bladders of ice. On the 31st, when Dr. Hildebrandt visited her, the temperature had risen to 97.9° ; she could not open her mouth, and complained of pains in the ear; she could not move her arms, and movements of the left hip-joint caused severe pain. Pressure under the lower jaw was painful; the elbows were slightly swollen, but not red, and movement of them gave great pain. Nothing abnormal was found on examination of the heart. About four grains of salicylic acid were ordered to be taken every hour in fennel-water. At 11 A.M. next day there was a considerable improvement in all the symptoms. The next night she slept well, and awoke next morning free from pain and fever. The salicylic acid was continued three times a day, in doses of one decigramme ($1\frac{1}{2}$ grain).

Dr. Steinitz, of Dresden (*Allgemeine Medicin. Central-Zeitung*, March 4, 1876), has given salicylic acid in several cases of acute articular rheumatism with success. He administers the pure acid in wafers or capsules, or in water, in doses of half a gramme ($7\frac{1}{2}$ grains) every hour. He has also used it in several cases of chronic articular rheumatism, but without effect.

Cases demonstrating the successful use of salicylic acid in acute rheumatism are also described by Dr. Teuffell (*Württemberg Med. Correspond.-Blatt*, no. 5, 1876); Dr. Putnam (*Boston Medical and Surgical Journal*, February 24); and others.

In the *Lancet* for April 8 is an account of four cases of acute rheumatism, two being of more than average severity, treated in St. Mary's Hospital, by Dr. Broadbent, with salicylic acid. The dose given in the first case was $7\frac{1}{2}$ grains; in the second, fifteen grains; and in the third and fourth twenty grains. It was administered every hour in these doses for six hours. In all the cases the result was a rapid reduction of the temperature, and an early relief of the patients from the local symptoms. In commenting on the cases, Dr. Broadbent says: 'It was impossible not to be astonished with the effects, and notwithstanding the many disillusion experiences in medicine brings, not a few of which have been furnished by acute rheumatism, I should not do justice to my conviction were I not to say that apparently we have in salicylic acid a remedy for rheumatic fever comparable to quinine as a remedy for ague. According to present experience rheumatic fever when treated by this drug is an affair of two or three days. The disease is common enough, and its usual course sufficiently well known, so that no long time will be required to establish some definite conclusion, and to bring out any possible injurious effects. The only complaint hitherto made of the acid is that it is hot and irritating to the throat; given in milk vomiting has been produced.'

'Careful examination of the effects on the pulse, temperature, urine, etc., will no doubt yield important information. Mr. Sworder, who has watched the cases very closely, states that the temperature invariably rises for a short time after the administration of the first dose, but the observations recorded in the careful notes taken at short intervals by him and Mr. Gawith, show a gradual fall, both of temperature and pulse-rate. No sphygmographic observations were made. Relief from pain was always quickly obtained, and, as a rule, the patients slept well, no opiate being required; as a rule, again, there was very free perspiration, but this of course is common in acute rheumatism.'

A paper by Dr. T. Maclagan, of Dundee, in the *Lancet* for March 4 and 11, on the treatment of acute rheumatism by salicin, must be mentioned in connection with the subject now under notice. Dr. Maclagan, holding the opinion that rheumatic fever is of malarious origin, was led to employ salicin, which has long enjoyed a reputation for tonic and febrifuge properties, and was at one time a good deal used as a substitute for quinine. He says: 'The idea of treating acute rheumatism by salicin occurred to me in November, 1874. I had at the time under my care a well-marked case of the disease, which was being treated by alkalies, but was not improving. I determined to give salicin; but before doing so, took myself first five, then ten, and then thirty grains, without experiencing the least inconvenience or discomfort. Satisfied as to the safety of its administration, I gave to the patient referred to, twelve grains every three hours. The result exceeded my most sanguine expectations. For some days prior to its administration the temperature had ranged from $101^{\circ}8'$ to 103° ; the pulse was 120, and the joints were swollen and very painful. On November 26 the alkaline treatment was stopped, and that by salicin commenced. On the following day, after eighty-four grains of salicin had been taken, the pulse had gone down to 100, the temperature to $99^{\circ}6'$ (from $102^{\circ}8'$ the previous day), a fall of over 3° , the pain and swelling of joints, but especially the pain, had much abated, the joints could be moved a little, and the patient expressed himself as being much better. On the next day (November 28) the temperature was natural, and the pain all but gone, the joints still remaining stiff. From this time he convalesced steadily and quickly.

'The case was a very striking one; but, by itself, could not be regarded as proof of the beneficial action of salicin. I was quite aware that cases of acute rheumatism do sometimes unexpectedly improve without any treatment, and had no surety that this was not a case in point. It afforded me, however, strong encouragement to persevere with the salicin. This I did; and all the cases of acute and subacute, and several of the cases of chronic, rheumatism, which have come under my care since then, have been treated by this remedy, and with results much more satisfactory than I ever got from any other remedy, the results being most marked and most satisfactory in distinctly acute cases, and least so in chronic cases.'

He gives the details of eight cases; four acute, three subacute, and one chronic. The following are the conclusions at which he arrives.

1. We have in salicin a valuable remedy in the treatment of acute rheumatism.
2. The more acute the case, the more marked the benefit produced.
3. In acute cases, its beneficial action is generally apparent within twenty-four, always within forty-eight, hours of its administration in sufficient time.
4. Given thus at the commencement of the attack, it seems sometimes to arrest the course of the malady as effectively as quinine cures an ague or ipecacuanha a dysentery.
5. The relief of pain is always one of the earliest effects produced.
6. In acute cases, relief of pain and a fall of temperature generally occur simultaneously.
7. In subacute cases, the pain is sometimes decidedly relieved before the temperature begins to fall; this is especially the case where, as is frequently observed in those of nervous temperament, the pain is proportionately greater than the abnormal rise of temperature.

8. In chronic rheumatism, salicin sometimes does good where other remedies fail, but it also sometimes fails where others do good.

Regarding the action of salicin on the cardiac complications of rheumatic fever, Dr. Maclagan has no experience. But, he observes, a remedy which curtails the duration, or mitigates the severity, of an attack of rheumatic fever, must of necessity diminish in a proportionate degree the risk of cardiac mischief.

The dose of salicin is from ten to thirty grains every two, three, or four hours, according to the severity of the case. Fifteen grains every three hours is a medium dose for an acute case. It is very certain that a much larger dose may be given without producing discomfort. Salicin is not soluble to any useful extent; it is best administered as a powder mixed with a little cold water. It is a very pleasant bitter. Dr. Maclagan never found the least inconvenience follow its use.

Dr. Maclagan further says that when salicylic acid (originally prepared from salicin) was first introduced, he determined to try it; and in the one case in which he did have recourse to it, it seemed to do good to the rheumatism; but it caused so much irritation of the throat and stomach that he did not repeat it. This was, no doubt, due to its being impure. He has no doubt that Traube's (Stricker's) observations are correct, and that salicylic acid will be found efficacious in the treatment of acute rheumatism. But he has as little doubt that it is not so good as salicin for this purpose, for it is more apt to contain noxious impurities, it is not so pleasant to take, and it apparently requires a larger dose to produce its beneficial action.

In the *Centralblatt für die Medicinischen Wissenschaften* for April 1, Dr. Senator, of Berlin, referring to Dr. Maclagan's paper, disputes the correctness of his idea that rheumatic fever is of malarial origin. Quinine itself, he says, is very uncertain in its effect in cases of rheumatism. He has also made observations on the therapeutic action of salicin, and has found results similar to those described by Dr. Maclagan. He believes, however, that the effect is due to the conversion of most or the whole of the salicin into salicylic acid within the body.

He says that salicin, given in doses varying from 30 to 75 or 90 grains, reduces febrile temperatures as certainly as does salicylic acid. He has as yet not had an opportunity of giving it in acute rheumatism. It is free from the disagreeable effects sometimes attending the use of salicylic acid, and may be given in powder with sugar, in wafers, or in solution.

ON SUNSTROKE. BY SIR JOSEPH FAYRER, K.C.S.I., M.D.*

Synonyms.—Coup de Soleil; Insolatio; Ictus solis; Erythismus tropicus; Sun-fever; Heat-fever (G. B. Wood); Thermic-fever (H. C. Wood); Heat-apoplexy; Heat-asphyxia; Calenture; Loo-marna (hot-wind stroke, Hindostan).

Definition.—Certain pathological conditions resulting from exposure to solar or artificial heat. These conditions are:

1. Exhaustion and failure of the heart's action in syncope.

2. A condition like shock, in which from the direct action of heat on the brain and cord in exposure to

* From the *Practitioner*, March, 1876.

the sun's rays, the nerve-centres, and especially the respiratory, are influenced, causing rapid failure of the respiration and circulation.

3. Intense pyrexia due to vaso-motor paralysis, and to the nerve-centres being over-stimulated and then exhausted by the action of heat on the body generally. Failure of respiration, of circulation, and of innervation generally result, and asphyxia follows. Recovery is frequent, but in many cases is incomplete from structural changes having taken place in the nerve-centres.

Nature, Pathology, and Symptoms.—(a) Simple exhaustion and syncope may occur under great fatigue or over-exertion, or depression from any cause, during exposure to a high temperature. Or when the head and neck are exposed to an intense heat and sun-light, a condition analogous to shock may be induced, by reflex action through the vagus and vaso-motor system. There is depression of nerve force, and prostration of muscular power; the skin is pale, cold, and moist, the pulse quick and feeble. Death may occur rapidly in the state of collapse from failure of the heart. Complete recovery is frequent.

(b) Asphyxia and apnoea may come on very rapidly, after certain premonitory symptoms of depression and weakness, though occasionally without prodromata during exposure, especially of the head and spine, to the direct rays of a powerful sun, when the atmosphere is much heated, and the nervous energy has been depressed by over-fatigue, dissipation, or illness. The brain and nerve-centres, especially the respiratory, are overwhelmed by the sudden elevation of temperature; respiration and circulation fail, the failure of the latter being probably due to the inhibitory influence of the vagus. When death takes place, as it does sometimes, very suddenly, during great excitement or exertion, it has been attributed to rapid *ante mortem* coagulation of the cardiac myosin. This, however, though it may occur occasionally, is generally a *post mortem* change, the heart's action being brought to a close by the heat; in the same manner, as it has been shown by C. Bernard and Lauder Brunton, that the effect of high temperature on animals is first to accelerate and finally to stop the heart, and especially the ventricles, in a state of contraction. Recovery is frequently complete, but sometimes tedious, and in many cases imperfect, ending in serious impairment of health or intellect, indicative of structural changes caused in the nerve-centres. The symptoms of this form of insolation, the real *coup de soleil*, are those of sudden and violent injury to the nerve-centres—unconsciousness and cold skin, feeble pulse, all the symptoms of depression; death resulting from rapid failure of respiration and circulation. If not fatal, reaction may result in a variety of conditions indicative of the injury done to the cerebro-spinal system.

(c) An intense state of fever, the result of the influence of heat on the nerve-centres, and through them on the vaso-motor nerves, and of the heating of the body generally, by the direct action of either artificial or solar heat, may occur, quite independently of the immediate operation of the sun's rays. It comes on as frequently at night, or in the shade, as in the day or in the sunshine, especially in persons who are exhausted by fatigue, overcrowding, depression from any cause, such as dissipation, want of rest, present or recent illness, and notably when the atmosphere is impure from overcrowding or want of cubic space.

The temperature of the body rises to 108° or higher, 110°. The brain, medulla, and cord, the nerve-centres generally, and especially the respiratory, suffer from over-stimulation and then exhaustion.

Respiration and circulation fail; there are dyspnoea, hurried gasping breathing, great restlessness, thirst, fever, frequent micturition; the skin has a pungent, burning heat. Sometimes it is dry, sometimes it is moist. The pulse varies: in some it is full and laboured; in others quick and jerking; the face and head and neck are congested to lividity, and the carotid pulsations are visible; the pupils, contracted at first, may dilate widely before death; delirious convulsions and coma, frequently epileptiform in character, relaxation of the sphincter, and suppression of urine, come on, and are frequently the precursors of death, which is caused by asphyxia.

Recovery not unfrequently partially occurs, to be followed by relapse and death; or secondary consequences, the result of over-heating, end in meningitis or cerebral changes which may destroy life or intellect at a later period, or permanently compromise the whole health or that of some important function. The premonitory symptoms of this form of insolation often manifest themselves for some hours; it may be days before they culminate in the dangerous condition just described; general malaise, disordered alvine or other secretions, profuse and frequent micturition, restlessness, sleeplessness, apprehension of impending evil, hurried and shallow breathing, precordial anxiety, gasping, giddiness, headache, occasionally nausea or vomiting, thirst, anorexia, feverishness which soon amounts to a pungent heat of skin, and high temperature as shown by thermometer. The surface may be dry, but it is sometimes moist; the pulse varies; and these conditions gradually become aggravated, and frequently become worst at night, when the patient passes into the condition just described, and is found unconscious or dying.

The symptoms vary considerably, but they point to a profoundly disturbed state of the cerebro-spinal nerve-centres, and to pathological changes in the organs or structures whose functions have been so gravely disturbed. Death results from asphyxia and apnoea. Recovery is often incomplete, or followed by permanent impairment of health, and generally by complete intolerance of heat and exposure to the sun.

For the first of the conditions just described, the term heat-exhaustion; for the second, *coup de soleil*, or sunstroke; for the third, thermic fever or heat fever (Wood), seem the most appropriate designations; or, if all be included under one, the old term Calenture seems not unfitting.

The morbid conditions above described, being due to heat alone, are not peculiar to any country or climate, and are liable to occur wherever persons are exposed under any circumstances to great heat, whether solar or artificial. For example, soldiers marching or fighting when oppressed by weight of clothing and accoutrements are apt to suffer either from simple heat-exhaustion, or that form of insolation which results from direct action of the sun on the head and neck. This is common enough in India during the hot season, in other tropical countries, in America, and is not unknown in Europe, or even in England during the heat of summer. Soldiers, workmen, artificers, and others in factories, heated

rooms, hospitals, barracks, tents, and even ships, especially in hot climates, are liable to suffer from heat-exhaustion, which may pass into the dangerous condition of heat-fever or insolation.

The stokers, or men serving in the engine-rooms of steamers in the tropics—the Red Sea, for example—are not unfrequently brought on deck in a state of complete exhaustion, from which they generally recover when exposed to the reviving influence of the air, or to douches of cold water, with some stimulant if the syncope be prolonged. Soldiers or others in service when exposed to great heat may drop out of the ranks, fall suddenly, pass into a state of coma, and die immediately, or recover after being in the greatest danger, but with damaged constitutions, rendered unfit for further service or residence in a hot climate. These cases occur on exposure to the direct action of the sun's rays when the atmospheric temperature is high, and especially when unusual exertion is being made.

But the most frequent cases are those of heat-fever which come on in houses, barracks, tents, ships, by night or in the day, away from the direct solar rays. A form of disease sometimes described as ardent fever, in India, is this condition supervening on the ordinary phenomena of ephemeral fever. It seems pretty well understood that heat alone is the effective cause of the so-called sunstroke. Malarious and certain hygrometric or barometric states of the atmosphere, have no special influence beyond that which they may exert on the general vigour of the constitution, or in rendering that person more or less susceptible to heat, and so far predisposing him to suffer from it.

A dry air, such as that of North India, with hot winds, is much better tolerated at a high temperature, than the damp atmosphere of Bengal at a much lower one. The dry hot air favours evaporation, and thus keeps the body cool, while in the damp heavy atmosphere the natural cooling function is almost in abeyance. Vigorous healthy persons of moderately spare frame, possessing sound viscera, and leading temperate and regular lives, in an otherwise pure atmosphere, can tolerate a great amount of heat, and are much less liable to suffer from it than those in whom these conditions do not exist. Acclimatisation has also considerable influence in conferring toleration. New arrivals are more prone to suffer than those who have become accustomed to the climate. It is well known that the native can bear an amount of sun on his shorn head, neck, and half naked body with indifference if not pleasure, that would very soon prostrate a European. But to a temperature of the air rising above a certain standard, all succumb, and natives of India suffer like others and die in numbers every year from 'loo-marna' (hot-wind stroke).

The exact amount and duration of toleration of a high temperature depend, to a great extent, therefore, on the vigour of natural constitution and the present state of health. The natural refrigerating powers of the body when in health, are such as to enable men to support very high temperatures, much above that of the normal state of the body, 99°. Thus, in the hot dry winds no inconvenience beyond discomfort is felt, so long as transpiration and perspiration is free. This cools down the body, enabling it to resist the great heat. It is obvious that in this there is a great expenditure of force, and when it fails suffering soon ensues. Disordered health, dissipation, over-fatigue, anything, in fact, that de-

presses nerve-power, reduces the normal physiological capacity, and consequently renders a man more liable to succumb.

The mortality from sunstroke is about 45 to 50 per cent., but of those who recover many are permanently injured, and remain invalids for the remainder of life, which is often shortened by the changes induced. These may be some weakness due to obscure structural change in the cerebrum, or to a chronic form of meningitis which affects the sufferer in various degrees of intensity; epilepsy, impairment of memory, great nervous irritability, headache, insanity, partial paraplegia, partial or complete blindness, extreme intolerance of heat, especially of the sun's heat, rendering the person utterly incapable of serving or living in a hot climate, or of enduring exposure to the sun. Or it may gradually end in complete fatuity, insanity, or epilepsy, meningitis, which accounts for the intense cephalic pain, or in a lesser degree. disordered innervation and derangement of the functions generally, thus seriously comprising the general health.

Morbid Anatomy.—In cases where death has taken place suddenly, as from shock, there is no very remarkable appearance. The heart may be found firmly contracted, but not always so—it may be flaccid. The lungs and brain and membranes may be found somewhat congested, but not invariably. As in cases of shock, the venous trunks, especially those of the abdomen and the right side of the heart, may be found too full of blood, and the pulmonary vessels may be overloaded with blood. The blood itself is dark and gummy, and is found effused in patches of ecchymoses, and indeed rendering the body more or less livid; the coagulability of the blood is also impaired, and it is wanting in oxygen.

In death from ordinary cases of thermic fever, the lungs and pulmonary system are often deeply congested, the heart is firmly contracted from coagulation of myosin, the whole venous system is engorged, and the body even before death is marked by petechial patches, or extensive ecchymoses of a livid appearance.

The blood is generally more fluid and gummy than natural; its coagulability is impaired, and it is acid in reaction. The corpuscles, though generally presenting no abnormal change, are somewhat crenated, and have less tendency to form rouleaux than natural, and the quantity of oxygen is much diminished. The body for some time after death retains a high temperature; when first opened the viscera feel pungently hot, and the incisions drip dark blood. Rigor mortis comes on very rapidly, from early coagulation of myosin.

The brain and membranes may be found congested, and in some cases there may be evidence of meningitis. Serous effusions into the ventricles or hæmorrhage into the brain-substance may be found to have occurred, and are not improbable in the congested condition sometimes existing in the head; but the disease is asphyxia, not apoplexy, and the most important changes are found in connection with the thoracic viscera.

Treatment.—In cases of simple exhaustion ordinary treatment is all that is needed. Removal to a cooler locality, the cold douche (but not too much prolonged), or the administration of stimulants may be beneficial. Tight or oppressive clothing should be removed, and the patient treated as in syncope from other causes.

Rest and freedom from exposure to over-exertion, fatigue, or great heat should be enjoined.

In that form of sunstroke where the person is struck down suddenly by a hot sun, the patient should be removed into the shade, and the douche of cold water being allowed to fall in a stream on the head and body, from a pump (or, as in India, from the mussuck, or other similar contrivance) should be freely resorted to, the object being twofold: to reduce the temperature of the over-heated centres, and to rouse them into action. During the assault on the White House piquet in the last Burmese war, numbers of men were struck down by the direct action of the sun during the month of April. They were laid out perfectly unconscious, in their red coats and stocks (they wore them in those days, 1852), but were recovered by the cold douche freely applied by the mussuck over the head and body. In some cases rousing by flagellation with the sweeper's broom was added, and all recovered with the exception of two cases, both of which had been bled on the spot where they fell. Mustard plasters and purgative enemata may be useful.

If recovery is imperfect, and followed by any indication of injury to the nerve-centres, or by the supervention of meningitis, other treatment may be necessary according to the indications. Much exposure to the sun should be carefully guarded against, and unless recovery be complete and rapid, the sufferer should be removed to a cooler climate, the most perfect rest and tranquillity of mind and body enjoined, and the greatest care be observed in regard to extreme moderation in the use of stimulants.

In the cases of thermic fever, heat being the essential cause of the disease, the object is to reduce the temperature of the body as quickly as possible, and before tissue-changes have resulted from the action of heat. As the hyperpyrexia is due not only to the direct operation of heat on the nerve-centres and tissues, but to the fever set up by the disordered vaso-motor arrangements, remedies such as may influence this disturbed condition have been suggested. The results have appeared in some cases to justify the theory; and the hypodermic injection of morphia and of quinine have both been considered to produce good results by their influence on the vaso-motor nerves and their power in retarding tissue change.

Bleeding has now happily been almost abandoned. The congested livid surface, the coma and stertor, which formerly suggested it, are not now so treated. Bleeding has, no doubt, great power in reducing temperature, and there are cases in which it may still be practised with advantage; but they are, I think, the exception, and not the rule. In cases where venesection has appeared first to give relief and mitigate the symptoms, the improvement has been often transient and followed by relapse into a more dangerous condition, which has terminated fatally.

I could lay down no absolute rule in this or other diseases with reference to the abstraction of blood; and it is quite possible that greater immediate danger to life may exist in an over-distended right side of the heart than in the loss of an amount of blood that might have tided the patient over that state of peril; and therefore I would suggest that each case in this respect be treated according to its own peculiar merits. The treatment generally consists in the judicious applications of cold, either by

affusions or by the application of ice to the surface, the reduction of temperature being watched with a thermometer in the axilla, mouth, or rectum.

Care should be taken not to prolong the cold application too long, as danger arises from depressing the temperature below the normal standard. The bowels should be relieved, and blisters may be applied to the calvaria and neck, though I may say I have not much faith in their efficacy.

In the epileptiform convulsions that so frequently occur, the inhalation of chloroform or ether may be of benefit, but their administration must be carefully watched. The earliest and most severe symptoms having subsided, the febrile condition that follows is treated on ordinary principles—salines and aperients being given, but not to the extent of depressing the patient. The diet must be carefully regulated, and of the blandest and most nourishing nature.

As improvement progresses, other symptoms may supervene indicative of intracranial mischief. Where the indications are those of meningitis, the iodide of potassium and counter-irritants may be used with advantage. Removal to a cooler climate is essential; as a general rule, it is desirable that the sufferer should not, for a long period at least, return to a hot or tropical climate, and he should be guarded against all undue exposure to heat, work, or mental anxiety of any kind.

The sequelæ of sunstroke are frequently from such causes most distressing, and render the patient a source of anxiety and suffering to himself and to his friends.

The less severe symptoms—those, probably, indicative of the slighter forms of meningitis—or of abnormal brain or nerve change—occasionally pass away after protracted residence in a cold climate, but they are not unfrequently also the cause not only of much suffering but of shortening of life. It is not possible in a short notice to describe all the conditions that may result. They point to permanently disturbed, if not structurally injured, cerebro-spinal centres, and the treatment required is as varied as the symptoms presented.

CLINICAL LECTURES ON CEREBRAL SYPHILIS. BY PROF. H. C. WOOD.*

Delivered at the University Hospital, Philadelphia.

I. DIAGNOSIS.

Gentlemen,—The subject of syphilis of the nervous system is one of so much importance, on account of the frequency of its occurrence and of the practical results of its recognition and correct treatment, that I would to-day call your attention to it most especially.

Viewed from a pathological stand-point, and omitting affections of the cranial bones and their periosteum, cerebral syphilitic affections may be arranged in three classes: those in which the chief lesion is a neoplasm; those in which it is an inflammation; those in which it is a degeneration of the vessels. In a very large proportion of cases all three lesions co-exist, and probably, in the great majority of instances, at least two of them are present. That a tumour or a meningitis may be the sole expression of a syphilitic taint is well known; but the connection between degeneration of the cerebral vessels and syphilis is not so familiar.

* *Philadelphia Medical Times*, February 19, 1876.

The frequency with which the venereal taint leads to degeneration of the large arteries is now well established; and in the work of Dr. Heubner (*Der Luetische Erkrankung der Hirnarterien*, Leipsic, 1874) are collected various cases in which *post mortem* examinations have proven the invasion of the cerebral vessels by the constitutional infection. It seems to me very evident that the connection between apoplexy and syphilis is more frequent and more immediate than is usually believed. Most drunkards are dissipated in more ways than one, and upon every man or woman who has had impure connection rests the shadow of a possible syphilitic taint. Alcohol is assigned as the cause of capillary degeneration in very many fatal apoplexies occurring in the young. Probably syphilis rather than alcohol is in these cases often the *fons et origo mali*. Further, it is perfectly conceivable that these two causes shall be co-workers of ruin.

In hospital practice it is often difficult to learn the history of apoplexies; and I have not yet been able in any case of apoplexy to verify a syphilitic origin by the conjoint evidence of a history during life and the finding of specific lesions after death. In one in my wards in the Philadelphia Hospital, the existence of a syphilitic lesion of the vessels of the brain was made exceedingly probable during life by the co-existence of a slow progressive brain-failure, without evidence of localised cerebral disease, but with very numerous retinal apoplexies in both eyes; this patient passed out of view before a final result was worked out.

The *diagnosis* of cerebral syphilis is a threefold one, embracing the seat of the lesion, its character, and the question whether it is or is not specific. The important practical decision is always as to the nature of the lesion.

It makes some difference in the treatment whether we believe the departure from normal to be inflammatory or neoplastic; but this difference is slight when compared with the difference in the treatment of specific and non-specific cerebral lesions. This is the more satisfactory because, for reasons which I shall state presently, I am convinced that it is sometimes impossible in the present state of our knowledge to distinguish with certainty between the two lesions during life.

Given a case of evident brain-lesion, is it possible to decide as to its syphilitic nature from the symptoms? Theoretically, gentlemen, it is not possible; practically, we are often able to distinguish the specific nature with reasonable certainty. Evidences of a progressively increasing pressure at the base of the brain occurring in an otherwise healthy young or middle-aged adult, without a history of exposure to sun-stroke or other cause of meningitis, point strongly towards a syphilitic origin.

Non-specific basal meningitis and basal cerebral tumours are very rare in non-tuberculous adults. Upon this is dependent the fact that slowly developed paralyses of the motor nerves of the eye and its muscles are generally dependent upon syphilis. Paralysis of the portio dura of the seventh pair does not have a similar significance, for several reasons. The nerve arises so far back, and proceeds so immediately outwards to enter the internal auditory meatus, that it is not usually seriously compromised by a basal exudation, and therefore escapes in syphilitic meningitis. On the other hand, owing to its long passage through the bony canal, and to its extremely superficial and exposed point of exit, the facial nerve

is excessively apt to be paralysed by rheumatic or other inflammations and exudations. Hence, facial palsy may be said on the whole to be antisiphilitic in its expression. It must, however, be borne in mind that specific palsy of the nerve may occur. I have seen unquestionable cases of it.

Cerebral syphilis may, however, destroy a patient without the induction of basal exudation, and without producing a single suspicious symptom. In these cases the primary guide must be the history. Often this is very clear, but not rarely it is of such character as to obscure rather than reveal the truth.

Syphilis of the nervous system usually occurs very late in the disorder, and is in my experience especially prone to exist in those whose secondaries have been unusually light, or even—if there be any truth in man—have been absent. Patients very often having been free for years from specific disorders, having had families of healthy children, and, it may be, even unconscious that they have ever had a primary sore, are astounded when they learn the nature of their malady. I am inclined to believe that in most of these people, when stripped, the experienced eye would find some suspicious markings; but in this country you cannot strip men, still less women, on suspicion, and both men and women suffer from cerebral syphilis.

When to the facts enumerated is added the perverse tendency not rarely evinced by patients to deny stoutly, even to the peril of life, that which they know to be true, it is evident that too great care cannot be exercised in cross-examining a patient and in receiving his answers *cum grano salis*. In asking questions, be careful as to time and opportunity. I have seen the specific character overlooked because the doctor questioned the man before his wife. He would be a stern adherent to truth who did not break allegiance under such provocation. It has come to be my invariable rule always to believe that indications of meningitis or cerebral tumour occurring in an otherwise healthy young or middle-aged adult are the results of syphilis, if a confession be made of even a single impure connection in early life. Indeed, I will go further. Often it is well to avoid questioning your patient at all, for his sake, for his friends' sake, for your own sake. Leave the history of the past unstirred. Make the therapeutic test, and keep your own counsel. Nothing will be lost to the patient, and a few weeks will enable you to decide the matter. If, gentlemen, you do this in every case of brain-tumour or of chronic meningitis occurring in young or middle life, you will some time stumble most unexpectedly upon a brilliant result.

It is a matter of some practical, and always of much scientific, interest, to determine the exact character and seat of the lesion in cerebral syphilis. The rules which govern the judgment in deciding the seat of the lesion are the same for specific and non-specific cerebral disease, and I shall not speak of them here. In regard to the character of the lesion, the trouble is to distinguish between syphilitic meningitis and tumour.

You will remember that the symptoms present in cerebral syphilis are, failure of general intellection and of special intellectual functions, local and general paralyses, convulsions, headache, and changes in the optic disks. Let us take these symptoms up *seriatim*, and endeavour to determine, if possible, their diagnostic significance.

Failure of memory and of the general intellectual powers is common to both meningitis and tumour,

but is more usual and more intense in tumour than in meningitis. A complete or nearly complete loss of intellectual power occurring in a case of cerebral syphilis would certainly indicate a very wide-spread involvement of the brain-tissue—one which could scarcely be other than secondary to a tumour or to a degeneration of the cerebral vessels. Still, I have seen very pronounced loss of memory and slowness of intellect, when *post mortem* examination showed that the chief lesion was a general and intense meningitis. The destruction of local brain-functions, indicating organic lesion occurring at such positions as not to be affected by the exudation of meningitis, is very indicative of tumour. Even such loss of power, unless total, cannot, however, be relied on. Thus, in a case of very decided, though not complete aphasia, I found, on *post mortem* examination, meningitis without appreciable lesion of the island of Reil. Nevertheless, total abolition of a localised function must be considered as decisive of change affecting either the centre or its nerves, and, when present, affords the best criterion we have for deciding the nature of the lesion. Thus, a complete or even a nearly complete hemiplegia in cerebral syphilis is almost a complete proof of the existence of a profound alteration in the neighbourhood of the corpus striatum, and, hence, of tumour, or of brain-softening from capillary degeneration.

On the other hand, paralysis of the basal nerves of the brain indicates meningeal trouble, because a tumour, at least without co-existent meningitis, is very rare in such positions, whilst chronic meningitis habitually assaults, with its exudation, the nerves of this region.

The convulsions of cerebral syphilis are of two forms, the one indicative of meningitis, the other of tumour. In the meningeal form the convulsion, in all cases which I have seen, was evidently dependent upon an acute exacerbation, and was not truly epileptiform.

The convulsion does not pass in a few minutes, but continues for hours, is evidently excited by irritation, so as to be almost tetanic, and usually is accompanied by decided rigidity and opisthotonos. With it is not simply sleep or stupor, but wild delirium, a fury of screaming and fighting. True epileptiform convulsions occurring at irregular intervals in cerebral syphilis are indicative of tumour. I do not mean to affirm that they are positive proof of the existence of a tumour. The evidence upon this point is not sufficient. They certainly do render the existence of a tumour exceedingly probable. Fatal cases of cerebral syphilis, under proper treatment, are very rare. Wherever I have had an opportunity of making *post mortem* examinations where epilepsy has existed during life, a tumour was found after death.

I do not think any light is thrown upon the lesion by the character of the headache; this varies very much in both affections, and may be very trifling in either. The same may be said of changes in the optic disk; excepting that, whilst a normal optic nerve is not very rare in tumour, it is almost inconceivable in basal meningitis with marked exudation.

LECTURE II.—PROGNOSIS AND TREATMENT.

Gentlemen,—In my last lecture, the subject of cerebral syphilis was studied from a diagnostic point of view; to-day I shall direct your attention chiefly to the prognosis and treatment of the malady. To

be able to give a correct idea of the future of any individual case of disease, it is necessary to have a knowledge of the usual course of the affection. Cerebral syphilis is, for the most part, a chronic disorder, which, when left to itself, eventuates almost without exception in death, but which, when properly treated, usually yields rapidly to remedies. The prospect of success in any case depends, of course, very largely upon the stage at which it is first seen; but it is remarkable how much of serious organic destruction assisted nature will often restore. Head-aches the most violent and persistent will fade away, paralysis complete and extensive will disappear, mental failures and aberrations of most marked type will yield, and the wreck of a man be restored to the full glories of American citizenship. Still, there are patients in whom the greatest skill fails; and the important question is, can we distinguish the tractable from the intractable cases? Not always can this be done, but the general experience certainly warrants the clinical rule—always give a very guarded prognosis where the symptoms of cerebral syphilis are coincident with those of syphilitic cachexia. When cachexia does not exist, a bright future should be predicted, unless there be evidence of total destruction of important portions of the cerebral centres.

Experience has, however, taught me that a favourable prognosis should not be made with absolute-ness, on account of the danger of some of the symptoms or accidents of the disease, and on account of the occasional occurrence of grave and even fatal acute exacerbations. I remember a case of cerebral syphilis seen in consultation, in which one of the most notable symptoms was epilepsy. I stated unhesitatingly that the patient would get well, and was seemingly justified by the rapid progress of the case towards health, until one day this progress was unfortunately impeded by an epileptic spasm, in which, the suspension of respiration lasting a moment too long, asphyxia occurred. After death, we found small gummata in the pia mater at the base of the brain, and also in the velum interpositum, with inflammation and softening of the pons in the neighbourhood of one of the tumours. The influence which acute exacerbations exert upon the prognosis, and the still greater influence they have upon the treatment, justify their consideration here in some detail. Nervous syphilis is, as I have already stated, essentially a chronic disorder, and yet it may at any time take upon itself a most acute type. Some of you may remember a man suffering from partial aphasia, violent headaches, failure of memory, etc., who presented himself on a Monday last spring at our clinic. The history of syphilis was distinct, and the diagnosis, so far as cerebral syphilis was concerned, was plain. The same night, the unfortunate patient was seized at home with a violent convulsion. A neighbouring practitioner was called in, and, notwithstanding the past history, the present unconsciousness, the wild delirium, with screaming that echoed through the house and fighting that it took three men to control, diagnosed strychnia-poisoning, and told the friends that no doubt the doctors at the hospital had meant well, but that they had overestimated the patient's strength, and had given a dose of strychnia which was too large for him in his weak condition. The strychnia-poison treatment was earnestly kept up until the next Friday, when the medical man in charge, beginning to suspect that something was awry, despatched a

note to me, stating that he had a patient of mine suffering from symptoms of strychnia-poisoning. It was, of course, too late for treatment to be of any avail; and the necropsy showed, what was almost equally evident during life, that the cause of death was an acute meningitis grafted upon a chronic syphilitic inflammation of the cerebral membranes.

Not only may an acute attack supervene upon a chronic cerebral syphilis, but the disease may in its outset be of the most acute character. Perhaps, however, in this statement I am going a little too far. It may be that a gumma has in these cases been lying concealed. Whether this be or be not the case I have no evidence to decide; but certainly, so far as symptoms are concerned, the attack may be most sudden and acute. Some years since, I saw, in consultation with Dr. Fricke, a case of this character, which I shall narrate directly, as it portrays not only the occasional acute character of the disorder but also the proper method of treatment in such cases.

What, then, ought to be the treatment of an acute cerebral syphilis? Very much that of an acute, non-specific cerebral attack of similar type. If there be a violent epilepsy, with the epileptic status, nitrite of amyl, anæsthetics, antispasmodics, and other usual remedies should be employed. If the pulse, the fever, the *tout ensemble* of symptoms, indicate intense cerebral congestion, or cerebritis, free venesection should be used. In any case of doubt, you should remember that it is far safer to bleed in specific epilepsy than in a threatening similar attack of non-specific character, because in the latter case there is little hope of removing the cause, whilst in the syphilitic patient there is every reason to believe that, if time be gained, remedies will remove the disorder. Violent specific meningitis should receive the same treatment as the non-specific disorder: bleeding, local and general, blistering, and mercury. In the previously mentioned case of acute meningitis supervening upon the chronic disease, the man should have been bled at once, *ad deliquium*. If he had been set up in bed, a large orifice made, and the blood allowed to pour forth until syncope came on, very probably to-day he would have been alive and in health.

In Dr. Fricke's case, the man, who believed himself to be in perfect health, felt very wretched and heavy one afternoon whilst out attending to business, and, returning home, sat down in his shop. He soon became semi-unconscious, and was helped upstairs to bed, and directly afterwards was seized with severe convulsions and delirium. A homœopathic practitioner was sent for, and a couple of hours later, the convulsions becoming more and more violent, Dr. Fricke was summoned. He found the patient raving, and furiously convulsed with both tetanic and clonic spasms. At first he employed the classic remedies of a mild character, such as assafoetida clysters, counter-irritation, etc.; but the mustard-plasters were kicked across the room, and doctor and syringe-pipe followed them with remarkable promptness. All the remedies simply redoubled the violence and frequency of the paroxysms; their application was the signal for a furious outburst; the least touch produced frightful contortions and spasms. Then the lancet was used; and when a quart of blood had flowed, quiet had been restored, and even the cheek of the bleeder began to blanch, but Dr. Fricke, with finger upon the pulse, ordered him to continue. When half-a-pint more had been taken, the pulse

began to fail very markedly, and the arm was bandaged.

After an hour or so, twitchings of the muscles and other symptoms indicative of a recurrence of the convulsions coming on, about a pint more of blood was taken from the temples by cupping, and the patient became as quiet and relaxed as a sleeping infant. The next day he awoke, weak, but free from pain and out of present danger. The subsequent history of the case revealed the nature of the attack; and when once the specific character was suspected, and the appropriate remedies employed, a gradual restoration to health was effected.

The treatment of chronic cerebral syphilis is essentially a simple one. It has been considered to consist simply in the free administration of iodide of potassium, and in the majority of instances this is true. In giving the iodide, it should be remembered that syphilitic patients bear it in enormous doses; that in many cases it seems to be both food and drink to them, the nourisher of well-being and moral restoration; that often, like the bromide in epilepsy, it is necessary for the patient to take it persistently for months and even years—even long after the disappearance of all symptoms. After trials of various methods, it seems to me that its administration in simple water or in infusion of chamomile affords the best method of giving it. Compound syrup of sarsaparilla certainly covers its taste better than anything I have tried, but is apt to sicken the stomach. In regard to the dose, there is rarely any use in giving less than a drachm a day, and frequently a drachm and a half, and even two or three drachms, are well borne. My rule is to commence with fifteen grains four times a day, and rapidly increase the dose until symptoms of iodism are induced, or until a daily amount of at least two drachms is reached.

I wish here to call your attention to the use of mercury in the disorder. I am convinced that it has come to be too much the custom to rely upon the iodide. When there is no cachexia, and therefore no contra-indication to mercury, it acts more quickly, and even more effectually, than the iodide, and in many cases the only objection to its use is prejudice.

I have seen a syphilitic epilepsy, which had resisted the most heroic doses of the iodide, disappear like magic before a mild ptyalism. I usually employ the blue mass properly guarded with opium as one of the mildest, and at the same time most efficient, of the preparations; but it does not make much difference which form is selected; only remember this: Give the mercury boldly and persistently until ptyalism is induced, but give it cautiously; watch the mouth, and the moment the gums become the least sore, reduce the dose, but do not withdraw the remedy altogether: keep the mouth a little sore for some days or weeks, as may be necessary.

In regard to the use of counter-irritants, I have not employed them to any extent in chronic cerebral syphilis. They may be of value, especially in cases of meningitis, but they are very annoying, and in most cases you can get along without them.

THE GREAT THERMAL ESTABLISHMENT AT DAX (LANDES, FRANCE).

No. 49, tome ii., of *La Revue Médicale* (December 1, 1875), edited by Dr. Sales-Girons, is filled from beginning to end with eulogies and descriptions of

the baths and establishment for invalids, which were founded at Dax about 1871. Dax, which takes its name from Aquæ, by corruption Acqs, and lastly D'ax or Dax, is situate in the rich valley of the Adour, in the department of the Landes. It lies between the 1° and 2° of W. longitude from Greenwich, between 43° and 44° of latitude N. The province is of course Gascony. The ancient name was Aquæ Augustæ Tarbellicæ. The town, which is still partly surrounded by the old Roman ramparts, on the left bank of the river Adour, and its suburbs (called Sablar) on the opposite bank, contain together about 10,000 inhabitants. It boasts a castle, a high church which was once a cathedral, the remains of the bishop's palace, a communal college, etc. The chief attraction of the place is without question the thermal springs, which have a temperature varying from 86° to 166° Fahr. [The hot springs at Bath (Somerset) have a temperature of 112° to 116° Fahr.] 'The mildness of the climate, which is at once mild and dry, especially recommends it to those who have most reason to dread cold and damp, and in particular, to rheumatic invalids,' says Dr. Rotureau, in his book on 'Les Eaux Minérales de l'Europe.' The town of Dax is situated between Arcachon, Biarritz, and Pau, all well-known winter resorts. It is near enough to the sea to acquire an almost uniform temperature, whilst environed by and embosomed in some thirty kilomètres (nearly twenty miles) of pine forests. It is about four hours journey from Bordeaux, two hours from Pau, one hour from Biarritz, and twenty-two or twenty-three miles from the sea-coast. There are mud-holes (*boues*) of warm sulphuretted minerals, and the mineral waters at a temperature of 140° are chiefly of sulphate of calcium in solution. The thermal establishment, built over these in 1869 and opened two or three years later, occupies a surface of some 1,532 square yards. The ground-floor or basement is entirely occupied with the different bath-rooms, rooms for electrifying, for vaporising, etc.; and all open into a large glazed gallery, which occupies the interior of the edifice or square. On the first floor the best bedrooms, dining and reading rooms, etc., also open into a large glazed gallery. These two conservatories, or glazed galleries or glass saloons, are 306 yards in length, and in them the air is kept constantly at temperatures of from 60° or 65° to 77° or 82° Fahr. These galleries are also well ventilated. Besides the advantages of the climate, invalids have here a complete set of baths of various kinds, of silicated, ioduretted, sulphurated, and chloro-ioduretted ferruginous waters, which can be bathed in, drunk, or taken in a pulverised form. There is a comfortable home for the invalid, who can get air without leaving the building; there are electrical appliances and careful medical treatment, under the supervision of M. Larauza, the medical superintendent. This watering-place is especially adapted for: 1, patients suffering from rheumatic affections of all kinds; 2, those suffering from throat and chest diseases, or from delicacy of these organs; 3, those suffering from neuroses and paralysis; 4, all those suffering from congestive maladies, especially if due to cold; 5, lastly, sufferers from anæmia.

There is one gallery especially devoted to the mud-holes. In a long gallery there are numerous small cabinets or bath-rooms quite isolated from one another, each containing a kind of bath or basin forty by fifty-two inches, which is filled by the warm mud

or *boue*. Alongside of this is a warm bath to clean off the mud. A liberal table is kept here; there are amusements of various kinds, and it is consolatory to know that in the great floods of 1873 and 1875, in which the Adour rose eighteen feet above its ordinary highest level, this establishment, though on its banks, was perfectly protected by its own walls and breakwaters. Even in the depth of winter, swallows and summer-flies are often seen at Dax. If a little less warm than Nice, it is far more protected and less relaxing. The charges are by no means excessive, being about 75 to 100 francs (three to four guineas) a week for patients, including everything, and from 50 to 75 francs (two guineas) for their friends; whilst servants and children under ten years of age are only charged 37 or 38 francs (about 30s.) per week. When it is remembered that these charges include the medical advice and treatment, as well as board, they cannot be considered anything but very moderate. We understand this tariff is subject to some modifications by special agreement with the medical superintendent.

W. BATHURST WOODMAN.

ANATOMY AND PHYSIOLOGY.

WALDEYER ON CONNECTIVE-TISSUE CORPUSCLES.—W. Waldeyer (*Archiv für Mikroskopische Anatomie*, Band xi. p. 176, and *Centralblatt für die Medicinischen Wissenschaften*, no. 3, 1876) considers the following subjects.

1. *The so-called Flat-cells* ('Platten Zellen') of the *Fibrillar Connective Tissue*.—Under this title the author groups the cells of the loose fibrillar connective tissue and of the formed fibrillar connective tissue of tendons and fibrous membranes. The tendon-cells do not represent simple rectangular plates, but are complicated structures, which are best characterised as 'compound plates,' and may be compared to the form of a wheel. A clear conception of the form of these cells is best obtained in the following way. Open a book so that its leaves are kept asunder in groups of four, five, or six, which meet each other at various angles; the whole then makes the same impression as a tendon-cell in miniature. One has not to do with one plate, but with several which are disposed in different ways irregularly one over the other. The margins of these plates are not cut off straight, but project into numerous fine processes, often of considerable length, so that the processes from two neighbouring cells may anastomose; just like the tendon-cells are the so-called fixed cells of fibrous membranes and those of the loose connective tissue. In fact, these cells are neither simple nucleated plates nor spindles, but are 'compound plates,' of which one, the 'chief plate' (*Hauptplatte*, W.), generally contains the nucleus. The other plates are of smaller size, and appear like little wings, which are attached to the chief plate at acute or almost right angles, and which, just like the margins of the chief plate, send out many small thread-like processes. Where bundles of fibrillar connective tissue are present, they insinuate themselves into the spaces which exist between two plates or wings resting on each other. The cells never lie however, directly on the bundles themselves, but are always separated by a more or less strongly developed interfascicular, *i.e.* interlamellar cement from the proper fibrillar mass, so that the

cells themselves are buried in cavities in this cement ('Saftraüme,' 'Juice spaces' of von Recklinghausen). The 'elastic stripes' of Boll, according to the author, only represent the side view of a neighbouring plate.

2. *The Fixed Cornea-corporcles.*—In the *Handbuch der Augenheilkunde*, by von Graefe and Sämisch, the author has described the cornea-corporcles as flat bodies, possessing a considerable quantity of finely granular protoplasm arranged around a nucleus which towards the periphery however, passes into a more homogeneous plate, provided with obvious processes which partly anastomose with those of other cells, and partly end free, so that all the *Saftcanälchen* are not filled with processes of the cornea-corporcles. To this description the author adds that the cornea-corporcles also, like those of tendon and connective tissue, are provided with delicate secondary plates. The nuclei lie in the centre, near the place of junction of the plates; the latter themselves—mostly two or three secondary plates to one chief plate—become quite thin, and are like a veil at the margins, and are there provided with processes.

3. *Large Connective-Tissue Cells, rich in Protoplasm.*—Besides the cell-plates, there occurs in the connective tissue another group of cells, not so numerous, but quite as important as these; large, more rounded cells, rich in protoplasm (embryonal-cells of the connective tissue or plasma cells, Waldeyer). They are found sporadically in the subcutaneous connective tissue, and in all fibrous and serous membranes, mostly in the neighbourhood of the blood-vessels. They are distinguished from the wandering cells by their greater dimensions, and by the absence of amoeboid movements. Certain peculiar groups of cells, whose histological significance up to this time was not obvious, are nothing more than groups of these plasma-cells. The author ascribes to this category: 1. The cells of the so-called interstitial substance of the testicle; 2. The cells of the hypophysis cerebri; 3. The cells of the carotid gland; 4. Large round cells, which are found not unfrequently as an adventitious covering on the vessels of the brain; 5. The cells of the suprarenal capsules; 6. The cells of the corpus luteum; 7. The so-called decidua or serotina cells of the placenta. It is characteristic of these cells that they always appear arranged directly around the blood-vessels, which they cover as with sheaths. The author proposes the name of 'perivascular cellular tissue' for them.

ERLER ON THE RELATION OF THE EXCRETION OF CARBONIC ACID TO CHANGE IN THE BODILY TEMPERATURE.—H. Erler (*Dissertation*, Königsberg, 1875, and *Centralblatt für die Medicinischen Wissenschaften*, no. 13, 1876) employed in his experiments rabbits, a caoutchouc cap being firmly fixed over the nose. The respiration was kept up through Müller's valve, and the expired air passed through a Geissler's potash-apparatus. The increase in weight of this apparatus at the end of the experiment represented the amount of carbonic acid excreted. In front of this apparatus there was placed a vessel with a solution of caustic baryta, in order to absorb any carbonic acid which might not have been taken up by the potash. In some cases, where the difficulty of respiration appeared too great, the apparatus was connected with an aspirator.

1. Carbonic Acid given off when the Animal was

tied down.—In every animal the amount of carbonic acid given off in the free condition was estimated for several periods of ten minutes each; then the animal was tied down, and the amount again estimated several times at the same intervals. The following table gives the mean for the carbonic acid given off:

No. r.	Carbonic Acid in ten minutes.	
	Free.	Tied down.
1. .	0.050 grammes.	0.042 grammes.
2. .	0.074 "	0.059 "
3. .	0.045 "	0.029 "
4. .	0.050 "	0.031 "
5. .	0.045 "	0.022 "

The weight of the rabbits varied between 1,020 and 1,372 grammes. The variations in the values are pretty considerable, but in every case the carbonic acid given off diminishes when the animal is tied down, and simultaneously there is a fall in the temperature.

2. *Carbonic Acid given off in the Paralysed Condition.*—This was produced by dividing the spinal cord. The temperature did not rise after this operation, but fell without exception, and that continually, as has been observed several times before. In three experiments the mean values were the following:

No. r.	Carbonic Acid in ten minutes.	
	Normal.	Paralysed.
1. .	0.046 grammes.	0.008 grammes.
2. .	0.074 "	0.017 "
3. .	0.091 "	0.016 "

3. *Carbonic Acid given off during Artificial Cooling.*—For this purpose the animals were placed in a double walled zinc box filled with ice. The body-temperatures obtained by this means are indicated in the following tables:

No. r.	Lowest Temperature of body.	Cent.	(90°32 Fahr.)	Carbonic acid in ten min.	
				Normal.	Cooled.
				0.049 gr.	0.024 gr.
1. .	32°34'	90°32	Fahr.)	0.049 gr.	0.024 gr.
2. .	32°7'	90°86	"	0.039 "	0.014 "
3. .	33°6'	92°48	"	0.034 "	0.016 "
4. .	34°4'	93°92	"	0.061 "	0.028 "
5. .	33°2'	91°76	"	0.039 "	0.016 "

4. *Increased Body-Temperature.*—The box employed for these experiments, instead of being filled with ice, was filled with warm water. The quantity of carbonic acid given off increased when the temperature of the body began to rise, but sank again as soon as the animals became dyspnoic, which generally occurred at 39.4° C. (102.92° Fahr.). If the temperature of the surroundings be very high, then the dyspnoea occurs so soon that no increase of the carbonic acid is to be observed. As the animals for this experiment must be tied down, the carbonic acid at the beginning of the experiment diminishes somewhat compared with the normal.

5. *Carbonic Acid given off by diminution of the Bodily Temperature, the Skin being covered with Varnish.*—Here also the excretion of carbonic acid fell, and simultaneously the temperature. The mean value of carbonic acid excreted in all the experiments was in the normal state 0.033, in the varnished 0.013 grammes. The temperature was reduced to 32.3° C. (90.14° Fahr.). Thus the amount of carbonic acid excreted and the temperature of the body stand in direct dependence one on the other.

MEYER ON RED AND PALE TRANSVERSELY STRIPED MUSCLES.—E. Meyer (*Reichert and Du Bois-Reymond's Archiv*, 1875, p. 217) found that the primitive bundles of the red semitendinosus were

distinctly thicker than the fibres of the pale adductor. While ten fibres of the semitendinosus, from a longitudinal section, lay in the field of the microscope, it required sixteen to twenty of those of the adductor to fill the same space. The nuclei of the fibres of the red semitendinosus were much more numerous and broader than those of the adductor. In the former five nuclei appeared on transverse sections, in the adductor only two. The capillaries of the semitendinosus were also characterised by having little aneurismal dilatations. It is shown that all the red muscles of the rabbit have not the same structure as the semitendinosus. Thus it is proved that the cause of the difference of the semitendinosus and adductor is different from that which occasions the difference between the red and pale muscles of the rabbit. There must be a special relation between the semitendinosus and the adductor which does not exist between the latter and the other red muscles. This relation can only consist in factors, which are present not only in the rabbit, but belong to the whole tribe of the rodents. The difference between the semitendinosus and adductor is not a special peculiarity of all rodents; it is only found in the guinea-pig. In as far as the rabbit and guinea-pig, in opposition to the other rodents, have this in common, viz., that they have been domesticated, the author believes that the cause of the partial change of colour in the muscle is to be ascribed to the imperfect movement of the parts in consequence of the domestication. From this point of view, it must be shown that other animals which have undergone a similar process of breeding show differences in colour. In fact, similar conditions (as far as the difference between the red and pale muscles is concerned) exist in the common fowl. Electrical stimulation showed that the semitendinosus of the rabbit passes into tetanus, when pronounced twitching is still clearly visible in the adductor. The semitendinosus seems to be used in a way differing from that of the other muscles of the rabbit; and the author believes that this muscle, in consequence of its being in constant use and in a state of tension in the living rabbit, has lost the power of passing rapidly from one condition into another.

SOCOLOFF ON THE SECRETION OF THE LIVER.—N. Socoloff (*Pflüger's Archiv*, vol. xi. p. 166) has tested the assertion of Huppert and Schiff, that glycocholic acid injected directly into the blood or absorbed from the intestine is for the most part again excreted by the liver. The author's experiments were made on a large dog with a biliary fistula. Solutions of glycocholate of soda were injected into the jugular vein (0.4 gramme and 0.8 gramme) and into the stomach (1 to 2 grammes). Before and after the injection the quantity of glycocholate acid in the bile, collected at intervals of half-an-hour, was estimated. Although in individual cases the quantity of bile increased, an increase of the bile-acids was not observed, and no glycocholic acid was detected in the bile excreted. The author therefore rejects the view of Huppert and Schiff. The increase of the secretion cannot be ascribed to the introduction of the water, but is rather to be regarded as the result of a specific stimulating action of the salts of the bile-acids.

RAJEWSKY ON ABSORPTION FROM THE HUMAN DIAPHRAGM UNDER DIFFERENT CONDITIONS.—A. Rajewsky (*Virchow's Archiv*, vol. lxiv. p. 186)

removed carefully the human diaphragm and stretched it, avoiding tension, over a funnel, or laid it on a plate and covered its abdominal surface with a thin layer of a solution of china ink in salt solution or with milk. The following results were obtained. 1. The human diaphragm has the property of sucking up fluids which contain suspended particles, just as is the case with the diaphragm of the rabbit, as was shown by von Recklinghausen. 2. The human diaphragm, when it has been changed by inflammatory processes, acquires the property of permitting fluids brought into contact with it to pass into its channels. 3. In diaphragms which have undergone inflammation by the smallest pressure there may be obtained an injection of the 'saftcanälchen system.' This system is connected with the lymphatic capillaries, and does not consist of mere spaces or slits, but of special canals, which are formed in the loose connective tissue. 4. Removal of the epithelial lining of the serous membrane, either naturally (by inflammation) or artificially opens new channels for the passage of the fluids, viz. the 'saftcanälchen,' which begin on the free surface of the serosa. 5. From the serous membrane, only small lymphatic stems can be followed into the subserous adipose tissue, where they become united into a network of the finest lymphatic capillaries, in each of whose meshes is placed a fat-cell. The experiments were made in the laboratory of Professor von Recklinghausen, of Strasburg.

VON PLATEN AND PFLÜGER ON THE INFLUENCE OF THE EYE ON THE METAMORPHOSIS OF TISSUE.—O. von Platen and E. Pflüger (*Pflüger's Archiv*, Band xi. p. 272, and *Centralblatt für die Medicinischen Wissenschaften*, no. 8, 1876) are of opinion that that condition of the brain which we term 'waking' is partly at least kept up by a summation of sensory stimuli; that the further waking condition of the brain causes a continual stimulation of almost all the centrifugal nerves, i.e. an increase in metamorphosis of tissue. A series of facts may be cited in support of this view—the rapid increase of the temperature of hibernating animals when they have been awakened by strong stimuli; the diminution in the production of carbonic acid during sleep, and also by the action of curara; lastly, the storing up of energy during sleep which cannot be attained so rapidly by simple rest. From this point of view, it appears probable that by removing all stimuli from the retina it ought to be possible to obtain a considerable diminution in the production of carbonic acid. The experiments of Moleschott on this subject, as the authors show, are not sufficient proof, because the greatest insensibility of the retina was not produced; and the same is true of an experiment by Pott.

The experiments of von Platen were made with Röhrig-Zuntz's respiration-apparatus on rabbits, in which tracheotomy had been performed. The rabbits respired pure oxygen, the amount consumed being read off directly. The carbonic acid was absorbed by caustic potash, and after acidulation with sulphuric or phosphoric acid was pumped out and measured. To exclude the light from the retina, rings of wood, in which was placed a piece of glass, were fixed in front of the eye. By means of a lid the light could be excluded. Each period, 'clear or dark,' lasted about twenty or thirty minutes. The periods alternated several times, and commenced sometimes with the one, sometimes with the other. Apart from a few

variations, the oxygen absorbed and the carbonic acid given off were greater in the light than in the dark. Of eight animals, in one minute the mean was :—

	In Darkness. Cubic Centimetres.	In Light. Cubic Centimetres.
Oxygen taken in . . .	120.465	140.665 = 100 : 116
Carbonic acid given off .	85.635	97.96 = 100 : 114

W. STIRLING, D.Sc., M.D.

GUDDEN ON THE REMOVAL OF THE KIDNEY AND TESTICLE FROM NEW-BORN GUINEA-PIGS.—The author (*Virchow's Archiv*, vol. lxvi. p. 55), found the following conditions in a full grown guinea-pig from which the left kidney had been removed immediately after birth. The left ureter was thinner than the right, and thinner than the ureters of another healthy adult animal examined for comparison. The duct was patent and its natural structures—epithelium, muscular, and fibrous layers—were present though somewhat less developed than normal. On applying a strong induced current, contraction was excited at the point of application without spreading to the neighbouring fibres, as was the case with the healthy ureter. Lastly, the left ureter presented a number of small diverticula involving all its coats. The right kidney was enlarged, its length being one-third as much again as the mean length of the two kidneys in the healthy animal; while its estimated bulk and actual weight were greater than those of the two normal organs together. The enlargement was clearly due, not to an increase in number, but to an increase in size of the various constituents; this at least was demonstrated in the case of the glomeruli and vessels, though not in the case of the tubules, on account of their varying diameters. It was not found that the heart was hypertrophied as a result of the operation.

Professor Gudden also removed both testicles under similar conditions, and found that the vasa deferentia and vesiculæ seminales were small, and that in proportion to the dependence of their development upon the presence and activity of the testicles. When one organ only was taken away, the vas deferens of the same side was thinner, and the corresponding half of the seminal vesicle was somewhat smaller.

ARNOLD ON THE CEMENT-SUBSTANCE OF SO-CALLED ENDOTHELIUM.—In the January number of *Virchow's Archiv*, p. 77, is an important paper by Dr. J. Arnold, who has made further researches into the nature of the substance uniting the so-called endothelium-cells (epithelioid cells.) For this purpose he has employed a new apparatus by which extremely small quantities of colouring matter were injected for long periods into the living animal. The materials used were a solution of sulphindigotate of soda, ferrocyanide of potassium, the part afterwards being washed with chloride of iron, so as to precipitate Prussian blue, and thirdly, Indian ink. Frogs and guinea-pigs were the animals experimented on; and the blood-vessels, lymph-sacs, peritoneal cavity, anterior chamber of the eye, and subcutaneous cellular tissue, were the parts into which the fluids were injected. In the case of the vessels, he obtained not only a network of coloured lines corresponding to the junction of their epithelioid cells, but also similar junction-lines in the perivascular sheath, as well as injection of this sheath, and the lymph-canalicular system of the neighbouring connective tissue, whence some of the fluids used passed into the serous cavities. On injection of greater

quantities, colouring matter was deposited even between the epithelial cells of the skin, glands, intestines, and in the lymph-canalicular system of the subcutaneous and intermuscular connective tissues. Other experiments sufficed to show that this deposit was the result neither of any action on the part of the cells, nor of mere imbibition, and that the lines of colour varied in breadth and distinctness with alterations in the tension of the vessel during injection. He therefore concludes that the epithelioid cells are but loosely connected, and the narrow space between them is filled with a fluid or almost viscid substance, which permits the passage of dissolved and suspended pigments, but that the appearance of the intercellular spaces varies according to the different conditions of tension of the endothelial membrane. The fact that solutions of metallic salts and dissolved and suspended colouring matters pass between the cells and reach the lymph-canalicular system indicates that the intercellular substance not only serves the purpose of a cement, but has important functional relations, holding an intermediate position between the vessel wall and the tissue on the one hand, between the vessel contents and the contents of the lymph-canalicular system on the other. The appearance of so-called stigmata he regards as due to the occasional increase in breadth of the fluid or viscid cement-substance.

F. TAYLOR, M.D.

BROWN ON THE ACTION OF BILE-SALTS ON THE ANIMAL ECONOMY.—Mr. J. Graham Brown (*Proceedings of the Royal Society of Edinburgh*, May, 1875) has carefully noticed the phenomena which follow the injection of the glycocholate and taurocholate of soda under the skin of rabbits. The quantity employed varied from ten to forty grains. The chief results are that a large dose of the bile acids kills the animal in from thirty hours to three or four days; the total nitrogen in the urine, as estimated by the hypobromite process, is increased; severe diarrhoea and drowsiness and somnolence increasing towards the end of life are often noticed. Albumen and hæmoglobin do not seem to have been present in the urine, as they always are after injection of the bile-acids into the veins. Only in one case was a trace of albumen present, and once or twice blood-corpuscles. Bile-acids are said to have been always present, but only rarely a trace of bile-pigment. The tests and the manner of using them, however, are not stated. A parenchymatous degeneration of the liver and kidney was also noticed, a fact not only made out by Feltz and Ritter, but so long ago as 1866 by Leyden. The hypodermic injections of bile-acids cause a destruction of the red corpuscles and apparent increase of number in the white, again resembling the results of injections into the veins.

[This research would doubtless have been greatly improved if the writer had made himself master of the views of Traube, Johannes Ranke, Röhrig, Schiff, and others, on the physiological action of the bile-acids. A contribution might also have been made to the discussion now going on between Hoppe-Seyler, Tarchanoff, and Naunyn as to the causes of the presence of bile-pigment in the urine, a subject which Mr. Brown touches, but does not fully enter upon.—*Rep.*]

J. WICKHAM LEGG, M.D.

HERZOG ON THE STRUCTURE OF TENDON.—Dr. W. Herzog (*Zeitschrift für Anat. und Entwicke-*

lungsgeschichte, Band 1, Heft. 3 and 4) examined transverse sections of the frozen tendo Achillis of the calf. The well-known stellate spaces and their connecting lines (so-called connective tissue corpuscles) appeared dark. The tendon-substance enclosed within these spaces and lines, designated by the author a primary bundle, was divided into a number of fields, separated from each other by clear anastomosing lines. In these fields the fibrillæ were seen as dark points. The author succeeded in filling the stellate spaces and their connecting lines with an injection mass, the result being a complete blue network.

[The drawing of these peculiar 'fields' reminds one at once of Cohnheim's fields in sections of frozen muscle. The reporter believes them to represent transverse sections of the structures he has lately described in tendon as primary bundles (seen lengthways), not to be confounded with the primary bundles of Herzog, which he termed secondary bundles.—*Rep.*]

G. THIN, M.D.

URBANTSCHITSCH ON THE ANATOMY OF THE OSSICLES OF THE EAR.—In the April number of the *Archiv für Ohrenheilkunde*, Dr. Victor Urbantschitch gives the results of the examination of the ossicles of fifty human ears. Some of these results are as follows.

Hammer.—The length of the hammer was on an average 8·5 millimètres. The short process averaged 1·6 millimètres in length. The long process was in an individual thirty years of age 2·5 millimètres, and in one of twenty years, 5·8 millimètres long. The manubrium, measured from the point of the short process to the lower end, ranged from 4·2 to 5·6 millimètres. The distance of the lower end of the manubrium from the periphery of the *membrana tympani* averaged in thirty-eight cases, 3·5 millimètres, from the inferior edge, 3·4 millimètres from the anterior border, and 4·6 millimètres from the posterior border.

Anvil.—The general distance of the upper end of the ambrosius-surface from the free end of the process brevis was 5·3 millimètres, and that of the lower edge of the same joint from the inco-stapedial joint 4·6 millimètres.

Stirrup.—The length averaged 3·7 millimètres; the breadth, measured from the middle of both limbs 2·3 millimètres, the distance of the upper arch of both limbs to the base of the anterior limb 2·2 millimètres, to that of the posterior limb the same. The breadth of the anterior limb averaged 0·6 millimètres, of the posterior 0·8 millimètres. The length of the base was 3 millimètres, the breadth 1·5 millimètres.

The *tensor tympani* is inserted into the manubrium generally to the extent of from 7 to 10 millimètre in breadth. The manner of its insertion was found to be very different. In nineteen cases it was inserted on the anterior surface, in twenty cases on the inner edge and anterior surface, in seven cases on the inner edge alone, in two cases on the inner edge and posterior surface, in two cases on the posterior surface alone, and in ten cases the tendon passed round the inner border, and was fastened on both the anterior and posterior surfaces.

The *stapedius* had an average length of tendon, measured from the summit of the pyramid to its insertion into the stapes of 1·2 millimètres.

W. LAIDLAW PURVES.

RECENT PAPERS.

On the Veins of the Retromaxillary Fossa, and their Relation to the Organ of Hearing. (*Monatsschrift für Ohrenheilkunde*, April and May.)

Study on the Auscultation of the Heart; Employment of the Diapason. By Dr. Huillier. (*Revue Médicale de l'Est*, May 1 and 15.)

MEDICINE.

SELIGSOHN ON A CASE OF HYDATID OF THE LIVER.—Dr. Max Seligsohn, a general practitioner in Berlin, remarks (*Berliner Klinische Wochenschrift*, February 28), that the interesting features of the following case, justify its publication with some detail. The following is a summary:—General jaundice, persistent pains in the lower part of the right half of the thorax, fatal termination with symptoms of asphyxia after fourteen days: *Post mortem* examination: Hydatid cyst of the liver, the sac of which was partly formed by the diaphragm. The existence of tæniæ was demonstrated two months before the jaundice occurred.

Mrs. C., aged thirty-nine, was known to Dr. Seligsohn since the year 1868, as an apparently healthy woman, who was in comfortable circumstances, and lived a very regular life. On February 7, 1874, she took a dose of koussou, for tape-worms, the result of which was so successful, that the tape-worm passed by her was not minutely examined. On April 10 she complained of gastric troubles, which increased so much by April 20, that she was unable to walk even a short distance, and was therefore seen at home, and found to be deeply jaundiced, as regarded both skin and mucous membrane. The patient, who had been very strong, though stout, complained of great general fatigue, and of great tenderness to the touch in the hepatic region. The tongue was pretty clean, but she had complete loss of appetite, and felt disgust at food. There was no fever. The exact limits of liver-dulness could not be determined, for the abdomen was much distended. On April 23, increasing weakness confined her entirely to bed. The pains in the hepatic region had increased, and extended to the lower half of the thorax on the right side. On percussion, there was dulness posteriorly on the right side as high as the inferior angle of the scapula; this extended also towards the left side as far as the extremely curved (cyphotic) spinal column; but towards the axilla the upper edge of the dulness was about two fingers' breadth lower. The left side of the chest exhibited exaggerated vesicular respiration. On the right side, the dull regions on auscultation only revealed very feeble breathing, and diminished fremitus. Only at the upper border of the dulness there were bronchial breathing and bronchophony. Over all the rest of the right chest there was feeble vesicular breathing. The heart-sounds were weak, but clear. Pulse 80, scarcely to be felt. Respirations 48 per minute. There was no expectoration. The jaundice was as before. The urine was slightly albuminous, and contained bile-pigment. Inspiration did not seem to depress the upper limits of the dulness. Next day, without any access of fever, the dyspnoea had greatly increased. Dry cupping on the right side gave no relief. She now lay on that side, and any attempt to move her brought on attacks of dyspnoea of great severity. It was at first thought that there was pleuritic effusion. Against this, there were the facts that breath-sounds were still

heard, and that the line of dulness was lowered in the axillary line. The increasing collapse, in so strong a person, and the great dyspnoea, contrasted strangely with the absence of febrile symptoms, and of any copious discharges. Drs. P. Guttmann and W. Koch, who saw her in consultation, imagined there must be pyæmic or septic processes going on—yet could not justify their opinion by the facts. They agreed as to the physical signs. The treatment was therefore directed to the symptoms, and consisted chiefly of senega with ammonia, and wine, etc. A few hours before death, a capillary puncture in the posterior and lower half of the right thorax gave exit to much thin, offensive, shreddy pus, without relieving the dyspnoea. She died in the forenoon of April 30.

The *post mortem* examination was limited to the thorax. On removing the sternum, a good deal of purulent serum escaped, and revealed a large tumour, surrounded with a thick envelope or sac. This filled almost the whole of the right pleural cavity, and nearly all the mediastinum, pushing the contents of the latter towards the left. It had a rounded summit, as high as the second rib, and extended downwards and forwards to the lower margin of the ribs. The right lung was compressed and flattened between the tumour and the chest-wall. The middle lobe of the lung was most flattened; the upper and lower lobes still contained air, were almost bloodless, but had some catarrhal secretion in the bronchi, etc. The covering of the tumour was formed by the right muscular and membranous portions of the diaphragm. An incision gave exit to a vast quantity of thin, bad smelling yellowish pus, intermixed with some hundreds of echinococcus-cysts of all sizes. The largest of these had a diameter of about three inches; the smallest hydatid was about the size of a pea. After about four-and-a-half litres of fluid (= one gallon nearly) had escaped, a large sac or cyst could be easily detached, the base of which was formed by the upper surface of the liver. The liver-structure was very slightly involved, whilst the diaphragm and pleura costalis and pulmonalis were intimately adherent to it. The inner surface of the cyst was rough and granular from fibrinous accretions. The liver was increased in size in all its diameters, and fatty. The heart, small and atrophied, had partly undergone fatty degeneration, and was pushed over to the left.

Dr. Seligsohn remarks that the criteria as to the upper limits of liver-dulness as distinguishing between pleuritic exudation and hydatids of the liver, on which Frerichs insists (*Klinik der Leberkrankheiten*, 1861, Theil ii. s. 242, vol. ii. of Dr. Murchison's translation, 'New Syd. Society p. 247,') failed in this case; indeed the border in the axillary line was concave rather than convex. The adhesions of the diaphragm, the corpulence of the patient, and the absence of bulging in the intercostal spaces, all increased the difficulties of diagnosis. If Frerichs speaks somewhat confidently as to the ease with which such tumours can be diagnosed, it is consolatory to find Davaine (*Traité des Entozoaires et des Maladies vermineuses de l'Homme et des Animaux Domestiques*, Paris, 1860, p. 437), quoting a series of such cases to prove that hydatids of the liver are often not diagnosed correctly, and are often confounded with pleurisy and hydrothorax. Thus Gooch had a case in a girl, aged nine, reaching as high as the clavicle, and containing some five pints of fluid. Puncture a little before death brought away only a little fluid. Dolbeau (*Étude sur les Grandes Kystes de la Surface convexe du Foie*, Paris, 1856),

had a case in a man, aged fifty-eight, who had suffered from pleurisy in the right side, with great dyspnoea. Here, too, the cyst was covered with the diaphragm, reached the second rib, compressed the whole right lung, and extended five fingers' breadth into the left thorax. Mercier and Combes had two similar cases, also mistaken for hydrothorax and pleuritic effusion. Davaine quotes another case from Duplay and Morel Lavallé, of a solitary large hydatid cyst, taken for pleuritic effusion. On the other hand, Frerichs gives a case in which the diagnosis was verified by a puncture in a woman aged thirty-eight. But here there was pointing, and the diagnosis was assisted by the discovery of leucin and succinic acid in a clear fluid, free from albumen. The cyst here was 9½ inches in diameter, and contained thirteen pounds of bright amber-coloured slightly turbid fluid, and there were echinococci on the inner wall of the cyst. (See Frerichs, *loc. cit.* English edition, vol. i. page 55; vol. ii. page 233.)

Dr. Seligsohn further remarks that the case is peculiar in several of its symptoms. There is first the jaundice which ushered in the fatal termination. It is rare in hydatid tumours of the liver to meet with any disturbance of the biliary functions, or of the portal circulation. Both jaundice and ascites, and severe dyspepsia are all rare. Davaine (*loc. cit.* p. 457), says that for the production of jaundice we must have (1), a somewhat extensive parenchymatous hepatitis, or (2), the echinococci must be discharged into either the biliary passages, or into the gall-bladder, through a communication with these being formed, or (3), the tumour must implicate either the common bile-duct, or some large hepatic bile-duct. As the *post mortem* examination showed no hepatitis and no pressure of the tumour on the bile-ducts, we are forced to conclude that the cyst communicated in some way with the biliary passages. According to Frerichs (*loc. cit.* Th. ii. s. 239; Dr. Murchison's trans. vol. ii. p. 119 and 230), such communications are seldom diagnosed in life. We may indeed suspect them, when jaundice occurs suddenly in such cases, or there are symptoms resembling gall-stone. Imperfect as was the *post mortem* examination in this case, yet the colour of the fluid and of the hydatids showed that bile had overflowed into the cyst. These communications are formed by the progressive growth of the cysts, just as they invade and destroy bronchi, blood-vessels, and the intestine. Rokitsansky, Budd, and Cruveilhier state that this influx of bile stops the growth of, and, indeed, kills the echinococci. It must remain doubtful, in this case, whether branches of the liver veins were not also laid open at the same time, and pyæmia and phlebitis thus set up, as mentioned by Charcley (Davaine, *Obs.* xciii.) and Bowman. The rapid course of the disease did indeed resemble pyæmia, or septic poisoning. The pressure of so large a tumour could scarcely help contributing to the fatal end. The local pains, according to Frerichs, are due to inflammation around the cyst.

Another point of interest is the presence of tape-worms two months before the jaundice sets in. This seems to be a solitary observation, and was, perhaps, only a coincidence. Küchenmeister thought that echinococci escaping into the alimentary canal might develop tæniæ in the same host (see 'Küchenmeister über Cestoden in Allgemeinen,' Zittau, 1853, s. 54). For this reason he blames Bilharz, who found the Tænia nana in great quantities in the duodenum of a child dying of meningitis, for not searching for

cicatrices in the liver or other parts, or other remains of hydatids (Leuckart considers the *Tænia nana* totally distinct from the *Tænia echinococcus*). But according to Pallas, Götze, and Bremser (R. Leuckart's 'Die Menschlichen Parasiten,' 1863, s. 333), no *tæniæ* have ever been raised from the human *echinococcus*. Küchenmeister, Zenker, and Levison in vain attempted to rear them "by feeding dogs and cats with human *echinococci*. On the other hand, Von Siebold ('Ueber Verwandlung der *Echinococcus*-brut in *Tænia*,' *Zeitschrift für Wissenschaft. Zoolog.* 1853, Bd. iv. s. 410) is convinced from experiments by feeding with *Echinococcus veterinorum*, that *echinococci*-germs brought whilst fresh and living into the digestive organs of a dog, develop under peculiar circumstances into a sexual mature tapeworm possessing only a pair of 'joints' (*Tænia echinococcus*). Röhl, however, (*Verh. d. physikal. Med. Ges. zu Würzburg*, 1852, s. 55) who reports two such cases in which he found similar triple-membered young individuals in the intestinal canal of dogs along with grown-up tapeworms and cucurbits, considers these small creatures to be the first stage of development of *Tænia serrata*.† Meanwhile, in thirty-six cases narrated by Davaine (*loc. cit.*), in which human hydatid cysts emptied themselves into the bowels, no trace of tapeworm was found. To these we may add, thirty-two cases of Davaine's, in which hydatids were got rid of through the bronchial tubes. For as these had to pass through the mouth, often for many months, it is clear that there were great risks of their being swallowed. In twelve of these cases there were *post mortem* examinations, but no *Tænia echinococcus* was ever discovered. If to these we add Frerich's case (*loc. cit.* Th. ii. s. 257; Dr. Murchison's trans. vol. ii. p. 261) in which four bile-tinged *echinococcus*-cysts without any hooklets either free or attached, were passed in the stools, but no tapeworms were discovered, we can scarcely consider the presence of tapeworms in the present case as more than accidental. As Charcot (quoted by Frerichs) observed a case in which the common bile-duct was completely blocked by hydatids, it is, however, very probable that the jaundice in the pres-

ent case was caused in a similar way, and that there was a communication with the biliary passages.

W. BATHURST WOODMAN.

SCHÜLEIN ON THE DISTRIBUTION OF HEAT IN THE COURSE OF FEBRILE DISEASES.—The discussion on this subject is continued by Dr. W. Schüle in Virchow's *Archiv* for January, 1876. His observations on the peripheral temperature were made by fixing the bulb of a thermometer between the first and second toes, in such a manner that they should completely cover it. The temperature of the skin thus obtained was compared with that reached by a thermometer placed in the axilla. The results were the following. 1. In healthy individuals the temperature of the skin is subject to frequent variations. 2. In the course of typhoid fever, peritonitis, acute rheumatism, erysipelas, puerperal endometritis, miliary tuberculosis, and caseous pneumonia, there are constant oscillations, which are independent of the temperature in the axilla. 3. On the other hand, in measles, scarlatina, and croupous pneumonia, the temperature of the skin rises pretty uniformly with that of the axilla, and in the two latter diseases remains constant or follows the slighter axillary variations. 4. In rigor a depression of the surface temperature accompanies the rise in the axilla. The observations agree in the main with those of Jacobson, already noticed in this journal (p. 107), with this exception, that they are in favour of the occurrence of paresis of the arterial muscular tissue in pneumonia, measles, and scarlatina.

DEUTSCH ON DROPSY AFTER AGUE.—In the *Medicinisch-Chirurgisches Centralblatt*, for March 10, 1876, Dr. Deutsch records the case of a boy, aged four years, who was brought to him in the winter with ague, at first quotidian, later of irregular type. The spleen was moderately enlarged. In the spring he had œdema of the eyelids and ankles, which subsided, but again appeared and disappeared. In the summer the boy had general anasarca, and was so bloated that he was unable to sit up or even to move. After various domestic remedies had been tried without avail, the dropsy spontaneously yielded, and enormous quantities of urine were passed. In a few weeks the boy was well; there was no fluid, no fever, and no enlargement of the spleen, but the skin hung loosely about his limbs, and the abdominal parietes were marked with atrophic lines. [The interest of this case is much diminished by the absence of any note as to the character of the urine, further than that it was abundant during the subsidence of the anasarca. The author, however, publishes it as a case of remarkable recovery without treatment.—*Rep.*]

F. TAYLOR, M.D.

MACSWINEY ON CIRRHOSIS OF THE LIVER.—In concluding the report, with comments, of a case of cirrhosis of the liver, in the *Dublin Journal of Medical Science*, for February, Dr. MacSwiney says: There are, I venture to say, few diseases to be met with which present such a number of unsolved or disputed questions on points of importance as cirrhosis of the liver. At present, the following inquiries, relating to various features of the disease, still remain to be answered.

1. Whether it is an inflammatory exudation or a degenerative process which precedes the atrophy of the liver in cirrhosis?

2. Is true cirrhosis ever due to any other cause but

* Compare with this the experiment of B. Naunyn (*Reichert's und Du Bois Reymond's Archiv*, 1863, s. 412-416). He fed a dog with the scolices from a human *echinococcus*, and six weeks after, when the dog was killed, the upper part of the intestines beginning at the pylorus) were filled with a sort of tape-worm most resembling the *T. echinococcus* of Von Siebold.

† It appears from a reference to a communication of Cauvet's (*Virchow-Hirsch. Ber.*, f. 1874, Bd. i. ii. Abth. s. 363) that both he and Pruner-Bey have met with *Tænia medio-canellata* in Syria as well as *T. solium*. The former seems even in Berlin to be the commoner variety (Robinski and Fritsch in the *Berlin. Klin. Wochenschrift*, no. 37, for 1874). According to Cauvet, the same man in whom the *T. medio-canellata* is found, has been the host for the worm in its earlier stages. This opinion (not the common one) is founded upon a single case, in which Cauvet found a hydatid in the diaphragm of a child, and in the inner wall of this cyst there was an embryo, with four large suckers, but no circle of hooks. In the original (Cauvet, *Gazette Médicale de Paris*, 1874, no. 33, p. 412) he states also, 'en examinant un lambeau du diaphragme d'un boeuf d'ailleurs en très bon état apparent, j'aperçus sous la plèvre une sorte de petite élévation paraissant remplie de sérosité.' After careful preparation, he finally isolated a bladder of the size of a hemp-seed, on opening which he found bodies attached to the inner wall, which when examined by a lens, exhibited four suckers and no hooklets. 'Je crois,' concludes Cauvet, 'avoir trouvé le cysticerque de *tænia inermis*.' It does not appear that Arnould (*Gazette Médicale de Paris*, no. 34, p. 425) is really opposed to this view of Cauvet's.

drinking undiluted spirit? And if it be sometimes due to other causes, which is the generally received doctrine, then—

3. What are the other causes of true adhesive hepatitis?

4. Is the disease caused by spirit-drinking different from the other forms, not only in cause, but also in its anatomical characters?

5. Are the different so-called varieties of cirrhosis, which are often undistinguishable by their symptoms during life, anatomically distinct?

6. On what does the swelling of the spleen in this disease depend?

7. Can the disease be cured in the early stage?

8. What is the nature of those cases where the symptoms are absent during life, and the disease is for the first time recognised at a necropsy?

RECENT PAPERS.

On the Treatment of Granular Meningitis by Walnut Leaves. By M. Dujardin-Beaumetz. (*Bulletin Général de Thérapeutique*, May 15.)

Pulsations of the Liver: Enormous Dilatation of the Hepatic Veins; Rupture of the Tricuspid; Adherent Pericarditis; Sanguineous Atrophy of the Liver. By Dr. Duroziez. (*L'Union Médicale*, May 23.)

On Dr. Basedow's Disease. (*Le Mouvement Médical*, May 20.)

Hæmoptysis and Entorrhagia consecutive on a Fall on the Head: Cure by electrifying the Spinal Marrow. By Dr. Jules Chéron. (*L'Union Médicale*, May 23.)

A Case of Paralysis of the Glottis after Trichinosis. By Dr. Navratil. (*Berliner Klinische Wochenschrift*, May 22.)

A Rare Case of General Chronic Peritonitis with Prolapse of the Umbilicus. By Dr. Stülzer and Dr. Kochs. (*Ibid.* May 22 and June 5.)

On some Rare Phenomena of Palpation and Auscultation. By Dr. O. Rosenbach. (*Ibid.* May 29 and June 5.)

The Etiology of Idiopathic Muscular Spasm. By Dr. H. Busenlechner. (*Medicinisches-Chirurgisches Centralblatt*, May 26.)

On Inflammation of the Lungs. By Dr. A. Schramm. (*Erztliches Intelligenz-Blatt*, May 9 and 16.)

On the Use of the Transportable Pneumatic Apparatus in the Treatment of Diabetes Mellitus complicated with Pulmonary Emphysema and Hypertrophy of the Liver. By Dr. V. Budde. (*Ugeskrift for Læger*, May 13.)

Arsenical Paper-Hangings. By Dr. F. H. Brown. (*Boston Medical and Surgical Journal*, May 11.)

Epileptic Convulsions following Sudden Suspension of a long-continued course of Opium-Eating. By Dr. S. C. Busey. (*Philadelphia Medical Times*, April 1.)

The Physical Differential Diagnosis of Effusions into the Pleura. By Dr. Valentiner. (*Berliner Klinische Wochenschrift*, May 22.)

Long-Continued Spasm of the Biventer Cervicis and Complexus Muscles, successfully treated by Electricity. By Dr. M. Meyer. (*Deutsche Medicinische Wochenschrift*, May 6.)

On the Diagnosis of Dilatation of the Stomach. By Dr. O. Rosenbach. (*Ibid.* May 20 and 27.)

A Case of Echinococcus Hepatis voided by the Intestinal Canal. By L. P. Baschalla. (*Ugeskrift for Læger*, April 1.)

Differences in the Symptomatic Manifestations of Cerebral Hæmorrhage. By Dr. L. Caspani. (*Lo Sperimentale*, May.)

Congenital Atrophy of both Lower Extremities, and its Treatment by Prolonged Sea-water Baths. By Dr. Flemming. (*Allgemeine Wiener Medizinische Zeitung*, April 18.)

DISEASES OF CHILDREN.

SEELIGMÜLLER ON SCLEROSIS OF THE LATERAL COLUMNS OF THE CORD IN FOUR CHILDREN OF THE SAME FAMILY.—The cases came under the observation of the author in January 1876 (*Deutsche Medicinische Wochenschrift*, April 22 and 29, 1876). The family history, which was carefully inquired into,

was remarkably good, with one significant exception—that the parents were first cousins. There was no evidence of syphilis. Seven children—six girls and one boy—were the result of the marriage. Of these, the eldest, aged eleven, was quite healthy; the second, aged ten, was in an advanced stage of the disease; the third was, if anything, worse still, but was not seen; the fourth, a boy, aged six years and nine months, was in the middle stage; the fifth and sixth were healthy; and the seventh, aged one year and nine months, was in the first stage of the affection. The disease began in a similar way in all. Strong and healthy when born, they continued so up to the age of about nine months, when a change took place. Able previously to sit up without trouble, they began to lose this power, and would fall to one or other side; later, the head and chest sank forward. At the age of two years, attempts were made to teach them to walk, but their efforts resembled those of an infant six months old. This was exemplified in the youngest patient, who, when supported under the armpits, made jumping movements, the legs being raised from the ground simultaneously. Subsequently, the children learnt to support themselves with difficulty against a chair, but even this power was lost again. The boy had lately been rapidly losing ground in this respect; he could still, however, drag himself about in bed, and, by means of a specially constructed chair on wheels, could walk. The two eldest children, when supported in the upright position, could not put one foot before the other; even when lying down, they were unable to move, the upper extremities being useless as supports. The youngest girl could sit for a short time on the table, but cried all the time, and soon fell to one side; she sat with her head and chest inclined forwards, the spine equally curved, and the thighs greatly abducted; when on the lap, however, she could move her arms and legs in all directions.

Contractions at the joints were present in a high degree in the three eldest. In the eldest girl, the hands were adducted and pronated; pain was produced by attempts at passive supination, and the hand, when released, jerked back to its old position. The fingers were rolled in towards the palm, but she could still extend them, though very gradually and with great difficulty. The grasp was still perceptible; the right better than the left. The elbows were slightly bent, and nearly fixed. The knees were half flexed, but could, with great force, be moderately extended or flexed still more, though on leaving them, they sprang back with a jerk. The feet were in the position of advanced equinovarus; the tendines Achillis were perfectly rigid. All attempts at passive movement produced considerable pain. The boy was put under the complete influence of chloroform, and the rigidity of the joints then so increased that the whole body could be raised from one leg and held out like a piece of wood. The youngest girl had so far no contractions.

Atrophy of the muscles was marked in the two eldest under observation. With the exception of those of the face, it was evenly spread over the whole system. The wasting in the case of the girl was considerable, so that the head seemed too large for the attenuated neck, and was moreover unsteady. The parents were confident that in all three the wasting was not visible for some time after the loss of power showed itself.

In the eldest child, the reaction of the tibial and

peroneal nerves was normal with both currents; but the irritability of the muscles was decidedly lowered everywhere. Of those on the back of the forearm, the supinator longus alone responded promptly. In the youngest girl, faradaic excitability of both nerves and muscles was perceptibly lowered in all extremities, but especially in the left lower. Galvanic excitability was lowered in the same way, and in the tibial nerves was almost *nil*. Ordinary reflex irritability not increased. That of the tendons, however, was present in a high degree in all. Fibrillary contractions were markedly present in the eldest girl, and could be produced by simply blowing on the skin. Sensibility was normal in all.

Of the symptoms noticed by the parents, that which made its appearance last was the gradual loss of the power of speech. Thus, in the two eldest girls, this was tolerable until their sixth year, when it became less and less distinct; until finally, only inarticulate nasal noises could be made. In the girl, the lips, soft palate, and uvula, were all paralysed, and the tongue lay in the mouth like a mass of dead flesh: its tip could be advanced only as far as the teeth. In the boy the same symptoms were present, but in a somewhat less degree. The youngest child could say a few words, but they had a slightly nasal tone. Swallowing in the two eldest girls was difficult; in the boy, tolerable. The form of the skull was unusual in all, but especially so in the eldest. It was very broad between the parietal eminences, and very undeveloped in the frontal region. The forehead was low, and the head altogether appeared too small for the face. In the eldest girl the features were coarse; the expression was vacant, but usually amiable; the pupils were much dilated; the saliva flowed continuously out of the half-opened mouth: and indeed her general appearance was that of an idiot, though, in point of fact, the intellect was very fairly developed. The faradaic excitability of the facial muscles was decidedly increased; the galvanic was normal.

The first diagnosis that suggested itself was complicated progressive muscular atrophy; but this was distinctly negated by the fact that the loss of power preceded, by some time, the atrophy. On the other hand, the symptoms coincided in all important points with Charcot's description of five cases of sclerosis of the lateral columns. The only deviations were that his patients were from twenty-six to fifty years of age, and that death took place in all within three years. This valuable paper concludes with two other cases, which are, however, imperfectly recorded, as they were only seen once.

CHVOSTEK ON EXOPHTHALMIC GOITRE IN A CHILD.—A case of this kind, interesting from its extreme rarity in children, is described in the *Klinik für Pädiatrik*, April 1876. The patient, a girl, aged twelve, was tall, slightly built, and somewhat anæmic. The exophthalmos, which had been noticed four weeks, was considerable; the sclerotic being exposed for two or three lines between the eyelid and the upper margin of the cornea. Latterly, vision had been indistinct for distant objects. The thyroid gland was markedly enlarged, its consistence soft. A distinct whizzing was perceptible to both hand and ear over the thyroid arteries, which, together with the carotids, appeared enlarged and unduly pulsating. There was said to have been no palpitation, but there had been occasional attacks of dyspnoea, accompanied by pain in the side. The heart's impulse

was diffused, its action violent. There was no murmur. An interesting feature of the case was that one or both ears sometimes became intensely red for a time. The mammae were very slightly developed. The girl had never menstruated, had lived nearly always in Vienna, was of cheerful disposition, and had always been healthy, though for the last two years she had complained occasionally of pain in the side and oppression at the chest, and was soon tired after exercise. The family history was good. During the short time the patient was under observation she was treated with the constant current, but without result.

BAUER ON A FATAL CASE OF INTESTINAL OBSTRUCTION DUE TO A FÆCAL CONCRETION.—Dr. Bauer relates the following case in the *Jahrbuch für Kinderheilkunde*, Band ix. Heft 4. A boy, aged eight, came under observation on May 26. His digestion had always been weak, but he had had no severe illness. For a long time he had been constipated, and the use of purgatives and clysters had produced much tenesmus and only small evacuations. The bowels were said not to have been properly opened since the preceding February. There had been no particular abdominal pain.

On admission, he appeared anæmic and excessively wasted; but not feverish. His strength was so much reduced that rectal examination was deferred for a day. The abdomen was very prominent, its superficial veins were distended; no distinct tumour was felt. On percussion, a muffled tympanitic sound was elicited over the whole left side.

No troublesome symptoms occurred during the day; but, on the next morning, he complained repeatedly of abdominal pain and fruitless straining. He received from the sister on duty two spoonfuls of castor-oil, the administration of which was followed immediately by excessive distress and dyspnoea ending in collapse, under which he sank at 8 A.M. The necropsy, twenty-eight hours after death, showed a very hard round faecal mass, of the size of the fist, situated immediately above the sphincter so as to form a valve, which must have been closed with each attempt at defæcation. No nucleus could be detected. The whole large intestine was greatly distended, and so elongated as to form an irregular zig-zag of six parts; the first descending arm (traced backwards) reaching from the epigastrium into the true pelvis; the second from the left axillary region to the right anterior superior spine of the ilium; the third from the fourth rib to the right iliac fossa. The rectum measured $6\frac{1}{2}$ inches in diameter. There was recent peritonitis of the parietal layer and of the posterior surface of the large intestine. The latter contained, besides altered faeces, a large quantity of fetid gas. The small intestine and stomach were healthy. The diaphragm reached on both sides as high as the second intercostal spaces. The lungs were much compressed. The left ventricle of the heart was strongly contracted; the valves and great vessels were healthy.

UNTERBERGER ON CIRRHOSIS OF LIVER WITH ASCITES IN A CHILD.—Dr. Unterberger reports (*Jahrbuch für Kinderheilkunde*, Band ix. Heft. 4) the case of a boy aged five, who was admitted on July 29, with extensive ascites of two months duration. The cause was unknown. His general appearance was good; the skin and mucous membranes were pale; the face not puffed; there was no sign of jaundice; he had slight double conjunctivitis. The

lungs were pushed up; at both bases there was a little tough rhonchus; above, harsh breathing. The heart's impulse was in the third intercostal space, three-fifths of an inch outside the nipple-line; there was reduplication of the first sound over the mitral area. Respiration 30. Pulse 110, small. The abdomen was greatly distended ($27\frac{1}{2}$ inches); there was an abundant venous network upon it and on the breast. The liver and spleen were not detected by either palpation or percussion. There was no œdema of the scrotum or lower extremities; no albuminuria. He had from two to four semi-liquid good coloured stools. His appetite was good. Diuretics and vapour-baths were ordered. On August 8, the abdomen was tenser, its circumference somewhat increased. Seventy ounces of clear, yellowish, slightly albuminous fluid were drawn off with the trocar. After the operation, the contour of the liver was distinctly perceptible. From the costo-xiphoid articulation to the free edge, it measured $3\frac{2}{5}$ inch, in the right nipple line it reached $1\frac{1}{4}$ inch, in the left $1\frac{3}{8}$ inch below the false ribs. It extended $3\frac{3}{8}$ inch to the left of the middle line. The edge of the organ was sharp; its surface on the right side was somewhat rough. The round ligament, the longitudinal fissure, and the fissure for the gall-bladder were all distinctly felt. The right lobe of the liver was not so well defined as the left, but was evidently not extensively enlarged. The spleen was felt one inch below the false ribs; its consistence was leathery. On Sept. 2, the fluid had re-accumulated. The abdomen measured $29\frac{1}{2}$ inches. The patient's general health had, however, improved. The stools were natural. Respiration 24; pulse 98. Ninety-five ounces of clear yellow fluid were removed. The left lobe of the liver had increased in size. The measurement from the middle line to the left border was now $4\frac{2}{5}$ inches; and from the costo-xiphoid articulation to the free edge $3\frac{3}{8}$ inches.

All went on well for some time. The patient ran about briskly; his appetite was good, and the motions normal. On Sept. 17, however, a change took place. Apathy set in with abdominal pain (especially around the punctures), vomiting and cyanosis. The patient died on the night of the 18th with symptoms of peritonitis.

The necropsy was made twelve hours after death. The left ventricle was somewhat hypertrophied; the valves were normal. The bases of the lungs were œdematous. The abdomen contained five pints of cloudy flocculent fluid. The peritoneum was injected; there were slight adhesions. The punctures were bright red. The intestine was catarrhal, and distended with gas. There was much fat in the mesentery and upon the stomach and small intestine. The liver measured 7.2 inches in length; 5.2 inch in height; 2.4 inch in breadth; the left lobe was 4.4 inches long. The colour was flesh red; the consistence, especially of the right lobe, was dense. The surface of the anterior border of the right lobe was covered with flat knobs from the size of a pea to that of a hazel-nut. The left lobe and lobulus Spigelii were quite smooth. The ligamentum teres was of the size of a finger, and contained much fat; its veins were obliterated. The gall-bladder was natural; its ducts were quite free. On microscopic examination, the left lobe and lobulus Spigelii showed new fibrous tissue between the individual cells. In the rest of the organ the fibrous tissue was fully formed. The right lobe showed, in addition, some points of telangiectasis. The spleen was 4 inches long, of

dark red colour and leathery consistence (spleen of congestion.)

The points upon which the author lays stress are: 1. The rarity of the disease in childhood, more especially when associated with ascites; 2. The rapid growth of the left lobe—one inch laterally in twenty-five days; 3. The noteworthy circumstance that in this case, as well as in the two described by Steffen, the right lobe was first attacked—the reverse of the order observed in adults.

RALPH W. LEFTWICH.

GIBNEY ON PERINEPHRITIC ABSCESS IN CHILDREN.—At a meeting of the New York Medical Journal Association, on March 3, (*New York Medical Record*, March 25), Dr. V. P. Gibney read a paper on perinephritic abscess in children, in which he reported and analysed the histories of nine cases. Of these, seven terminated in abscess with external opening, and two in resolution. The existence of that affection had been denied by some authors; and, excluding all cases in which the abscess had been clearly of a secondary character, only three cases had heretofore been placed upon record. The ages of the patients, in the cases reported by Dr. Gibney, were respectively, 8, $1\frac{1}{2}$, 6, 9, $3\frac{1}{2}$, $2\frac{1}{2}$, 6, 10, and 2 years. Six were females, and three males. In seven cases no exciting cause could be found. Six out of the nine gave no evidence of struma. In seven cases the abscess (including the three cases reported by others) were upon the right, and in five upon the left side.

The disease usually began with a rigor, followed by febrile symptoms, more or less severe, loss of appetite, general indisposition, lancinating pains, and the locality of the pain was perhaps not positively determined.

Constipation was always present. There were elevation of the shoulders, a disposition to stand with the body leaning forward, flexion of the thigh, pain in the region of the kidney, tenderness upon pressure, prone position, tumefaction, and, finally, fluctuation. These symptoms, associated with the fact that the attack was an acute one, were regarded as those chiefly to be relied upon in making a diagnosis. Dr. Gibney regarded diagnosis of perinephritic abscess in the very young child as impossible. The most prominent portion of the abscess in these cases was situated near the centre of the crest of the ilium, three or four inches to the right of the vertebral spinous processes. In one case the tumefaction in the right lumbar region was five inches in longitudinal, and eight inches in transverse measurement. In this case jaundice was present. Spasm of the psoas muscle was regarded as a notable symptom, and in the cases reported was relieved in a marked degree after the evacuation of the pus. The practical diagnosis of this affection from hip-disease was not always easy.

While studying some of his cases, Dr. Gibney had felt almost prepared to admit the impossibility of making a differential diagnosis between perinephritic abscess and caries of the vertebræ. But when a case came under observation in which were present rigors, fever, nausea and vomiting, constipation, loss of appetite, pain in the side, etc., and the attack acute, spinal disease was believed to be very easily excluded. In primary uncomplicated cases the prognosis was favourable, and the treatment consisted in attention to the general condition of the patient; and, as soon as fluctuation became distinct,

evacuating the contents of the abscess, either by means of the aspirator or bistoury. Dr. Gibney remarked that he had not derived any special advantage from injecting the cavity of the abscess after the pus had been evacuated.

RECENT PAPERS.

- On Fissure of the Anus in Suckling Infants. By M. Marbourg. (*L'Union Médicale*, May 18.)
 On Aphthæ and its Treatment. By M. Bouchut. (*Gazette des Hôpitaux*, May 23.)
 Diabetes Mellitus in a Child a year and a half old. By J. L. Busch. (*Ugeskrift for Læger*, March 25.)

SURGERY.

DENEFFE AND VAN WETTER ON THE PRODUCTION OF ANÆSTHESIA BY THE INTRAVENOUS INJECTION OF CHLORAL-HYDRATE.—The authors have brought together into a volume several papers read on various occasions before the Belgian Academy of Medicine. They begin by giving a brief sketch of the history of surgical anæsthesia in general, and of the various attempts which have been made from time to time to introduce remedies directly into the current of the circulation. M. Oré's experience in the treatment of tetanus by the intravenous injection of chloral-hydrate is then discussed. Lastly, they give a tolerably full account of thirty-four cases in which various operations were successfully performed during anæsthesia produced by this new method. Eight of these cases occurred in the practice of M. Oré himself at Bordeaux; the remaining twenty-six are original.

The following is a condensed description of the plan devised by M. Oré, and recommended by Deneffe and Van Wetter. The solution employed contains 10 grammes (1 gramme = about $15\frac{1}{2}$ grains) of chloral-hydrate in 30 grammes of distilled water. This solution is not unfrequently found to redden litmus paper, owing to the presence of a small quantity of free hydrochloric acid. It should always be tested and, if acid, should be carefully neutralised by the addition of a few drops of a solution of sodic carbonate. The injecting apparatus consists of a graduated glass syringe, containing when full about 24 grammes of the solution. The nozzle of the syringe may be fitted into an intermediate tube of metal which has a wire sieve in its interior, destined to prevent any solid particles accidentally suspended in the solution from entering the vein. This metal tube, in its turn, is adapted to a fine gilt cannula provided with a steel trocar.

The following is the mode of procedure. The syringe is filled with the solution, care being taken to exclude air-bubbles; the intermediate tube is then screwed on to its nozzle. The trocar, armed with its cannula, is introduced into one of the veins of the arm, which has been previously distended by bandaging the limb higher up. The trocar is then withdrawn, and the jet of blood from the cannula shows that the latter is in the vein. The bandage is removed, and the syringe connected with the cannula. Not more than half a gramme of chloral hydrate should be injected at each movement of the piston. When from four to five grammes have penetrated into the vein the patient usually complains of feeling very drowsy. The injection ought now to proceed very slowly; complete insensibility is usually attained when from seven to ten grammes

of chloral hydrate have entered the circulation. The business of injection should not be hurried; on the other hand, it ought never to last longer than ten minutes. When the full effect of the anæsthetic has been produced, the cannula should be withdrawn, and the puncture covered with a bit of plaster. The anæsthesia thus induced is absolute, and the muscular relaxation complete; the patient lies on the operating-table like a corpse. After an interval of time varying from twelve minutes to three hours, this state gives place to one of deep sleep, from which, however, the patient may be temporarily roused. This after-effect of the anæsthetic may continue for many hours, or even for two days; while it lasts the patient feels no pain, and is perfectly tranquil.

The following advantages are claimed for this mode of producing anæsthesia: 1. Absence of any preliminary stage of excitement; 2. Absence of nausea and vomiting; 3. Accurate graduation of the dose administered; 4. Absolute character of the anæsthesia and muscular relaxation produced; 5. Prolonged blunting of the patient's sensibility, which protects him from the influence of shock.

The disadvantages may be classified under two heads: hypothetical, and observed. Among the former, the authors place the risk of thrombosis and embolism, inflammation of the wounded vein, difficulty of producing insensibility, danger of prolonged stupor. Among the latter, they enumerate transient dyspnoea, occasional irregularity of the heart's action, presence of a small quantity of blood and albumen in the first urine passed after the injection (this occurred in two out of their twenty-six cases), and finally, the risk of fatal syncope. That this risk is by no means illusory appears from one of their own cases. A healthy man was about to be operated on for cataract; six grammes of chloral-hydrate had been injected; insensibility was complete; one of the lenses had been removed, and the surgeon was about to perform section of the cornea in the other eye, when the pulse and respiration stopped suddenly and together. An attempt was made to resuscitate the patient with the aid of galvanism; but the battery was out of order, and the other means employed proved ineffectual. The heart was found flaccid, and with all its cavities full of blood; there was no clot in the veins of the arms, none in the right ventricle or pulmonary artery. In short, death could only be attributed to cardiac paralysis.

This fatal result does not stand alone. The authors lost another patient, from whom an ovarian tumour had been removed under the influence of chloral anæsthesia. In this case, however, death occurred an hour and a quarter after the injection had been completed; much blood had been lost during the operation, and the authors are disposed to ascribe the fatal issue to exhaustion from hæmorrhage.

It is only fair to add that the dangers and difficulties, whether real or imaginary, of M. Oré's method, do not in any way damp the enthusiastic anticipations of M.M. Deneffe and Van Wetter; they look forward to a time when the injection of chloral-hydrate into the veins shall have supplanted the various methods of inducing anæsthesia which now divide the suffrages of the profession.

E. BUCHANAN BAXTER, M.D.

MAAS ON POLYPI OF THE MALE BLADDER.—Dr. Hermann Maas, of Breslau, reports in the *Ber-*

linen Klinische Wochenschrift, no. 4, 1876, three cases of benign polypoid growths in the bladder of the male. Vesical growths of this kind are very rarely found in the male, and, in consequence of the anatomical conditions of the urinary passage in this sex, both the diagnosis and the treatment of the affection are attended with much difficulty. The subject of the first case was a carpenter, aged fifty-three years, who had been much weakened by frequently repeated hæmorrhage from the bladder. The urine, when not tinged with blood, was clear and apparently healthy, and a large catheter could be passed into the bladder without any difficulty. Dr. Maas, acting on the supposition that there was some slight ulceration of the vesical mucous membrane, proceeded to wash out the bladder by injecting a weak solution of carbolic acid through a large double catheter. During this operation the outflow of the fluid from the bladder was suddenly arrested by the impaction in the eye of the catheter of a soft mass, which proved to be a mucous polypus of the size of a hazel-nut, and furnished with a short and broad pedicle. A second and smaller growth of the same nature was removed at the same sitting in a similar way. There was very little hæmorrhage after the removal of the growths, and the patient subsequently remained quite healthy, and free from a repetition of hæmaturia. The growths thus extracted presented under the microscope the ordinary appearances of mucous polypi. An investing coat of mucous membrane, thickened by increase of its connective tissue elements, surrounded a mass of connective tissue which had undergone mycomatous degeneration. Both the submucous tissue and the outer layer of thickened mucous membrane were traversed by numerous wide and thin-walled capillaries. The second case was that of a man aged thirty-three years, who at first was treated for a tight urethral stricture. After this had been gradually dilated to such an extent that a full-sized catheter could be passed into the bladder without difficulty, the patient had an attack of retention. An instrument was then passed along the whole length of the urethra, but it was not until after some manipulation that Dr. Maas succeeded in drawing off the urine from a much distended bladder. This fact led Dr. Maas to diagnose the existence in the bladder of some movable body which had a tendency to slip into the urinal extremity of the urethra, and to remain there until pushed back by an instrument into the bladder. As there were no indications of a calculus, it was thought that this also might be a case of polypus. A large single catheter was passed, to which was attached an arrangement of elastic tubing and a funnel, by means of which fluid could be injected into or withdrawn from the bladder at pleasure. After a few injections an elongated polypoid growth was caught in the eye of the catheter, and extracted as in the former case. This growth resembled in its microscopic characters the growths removed from the first patient. The result of this treatment was quite successful, and there was no further attack of retention. In the third case, the patient, who was thirty-eight years of age, had also suffered from urethral stricture, and frequently repeated attacks of retention, which could always be temporarily relieved by the passage of a small instrument. The stricture was fully dilated by Dr. Maas, but the attacks of retention were still repeated, and became more and more frequent. As these attacks could not be attributed either to vesical calculus or to spasm of the coats of the urethra, it

was thought that, in this as in the two previous cases, there might be a polypus in the bladder. Injections were made as in the second case; a small polypus with a long and thin pedicle soon stopped up the eye of the catheter and was then removed. The patient had no subsequent attack of retention.

Dr. Maas points out that, though one might be disposed to regard the forcible pressure of the bladder in consequence of urethral stricture as the cause of protrusion of small portions of the vesical mucous membrane in the second and third cases, this view is opposed by the anatomical condition of the mucous membrane at the base of the bladder, and by the fact that, whilst urethral stricture is a frequent affection, polypoid growths in the bladder are rarely met with. According to A. Förster, these growths may be caused by irritation of the inner surface of the bladder, as in chronic hyperæmia, catarrh, etc., conditions which were present in the last two cases. In none of these cases did Dr. Maas succeed in making out the presence of the tumour by instrumental or digital examination. The small size and the soft consistence of such polypoid growths account, he states, for this failure. The secondary affections and the impairment of function observed in the three cases were such as had been previously described by authors. In the first case there were spontaneous hæmorrhages, which usually came on after abuse of alcoholic drinks, and were probably due to turgescence of the tumours and rupture of some of the thin-walled capillaries during micturition. Sloughing of small portions of the mucous investment, regarded by Förster as a frequent cause of bleeding from vesical polypi, was not observed in any of the growths removed by Dr. Maas. The method of treatment by which one of these growths may be forcibly carried by an outflowing stream into the eye of a large catheter seems, on account of its simplicity and freedom from risks, to be preferable to the use of a noose, as recommended by Dieffenbach, Guillon, and Bardeleben. But as Dr. Maas allows, his plan can be carried out with success in those cases only where the polypi are small.

W. JOHNSON SMITH.

HENDRY ON AVULSION OF THE WHOLE UPPER EXTREMITY: RECOVERY.—Dr. George Hendry, of Zilwaukee, Michigan, relates, in the *Detroit Review of Medicine* for December, the case of Samuel Watson, who, on July 22, 1874, while putting on a belt in a shingle mill, had his left arm caught between it and the pulley, and carried round the shaft four times. The arm then gave way, and he was thrown to the floor in an unconscious state, in which he was picked up and carried to his boarding-house.

On visiting him, Dr. Hendry found that the arm had separated from the shoulder in a circular manner, as a coat-sleeve torn off by the seam, but leaving a mass of flesh and bone projecting from the shoulder. This proved to be the entire scapula, with the posterior inferior angle projecting forward and out of the opening left by the separation of the arm, the head turned backward, occupying the place of the superior posterior angle, carrying with it and attached to it about one-third of the humerus, separated from all its muscular attachments but the deltoid.

While Dr. Hendry was bringing the patient under the influence of chloroform, Drs. B. B. Ross and C. H. Sample arrived. Dr. Ross removed the scapula by cutting the few attachments which remained. He

then removed one and three-fourths inches from the clavicle, which projected out of the wound. The anterior of the wound was ground out and blackened by the belt of the pulley, the remaining part covered with sawdust, which was washed off, and the exposed lymphatic glands cleaned and left in place. The subclavian vessels were torn off outside of the clavicle, and had bled but little. They were secured by ligatures. Some of the nerves were separated from the spinal cord, while others hung down four or five inches. The wound was smeared with balsam of Peru, the integument brought together and firmly stitched. A compress of oakum, wet on one side with balsam, was laid on the wound; the whole chest was then tightly bandaged.

From the wound down the side of the latissimus dorsi there was an infiltration of air through the wound. Svapnia was given in place of morphia, in sufficient doses to quiet pain and induce sleep. Cold was applied around the wound and along the side by ice in self-sealing fruit-jars—nothing being at hand more convenient.

In eighteen hours the fever was high; pulse 150; he had delirium and restlessness. The whole side, from the wound to the crest of the ilium, was highly inflamed, presenting a bright red appearance. Quinine was given, one grain every hour, with egg-nog, beef-tea, and raw eggs *ad libitum*. The following day there was a slight improvement. From this time the symptoms gradually grew better, pain subsiding as suppuration advanced. There was some sloughing of the edges of the wound, which were removed as required, and carefully syringed with an aqueous solution of carbolic acid. All along the track of infiltrated air there was a profuse suppuration, requiring incisions at different points down to the ilium, from which were discharged shreds of cellular tissue and a greenish pus of very offensive odour. On the twentieth day the wound was healing well; but to facilitate it Dr. Hendry engrafted several pieces of skin, which all took well, filling up the wound in eighteen days. An injury of the hip was at the time overlooked, but he recovered from it. At the time of injury, he had just recovered from a fracture of the lower part of the tibia and fibula.

BUCK ON A CASE OF PERITYPHLITIC ABSCESS, PRINCIPALLY TREATED BY EXTERNAL OPENING.—In the *New York Medical Record* for January 15, Dr. Gurdon Buck relates a case of perityphlitic abscess occurring in Mr. J. M., aged twenty-six, a person of good constitution and regular habits. When he was first seen, on November 8, he was suffering from very severe pain in the right iliac region. The abdomen was supple, but extreme tenderness on the slightest pressure existed over a spot that could be covered with the thumb at a point three fingers' breadth distant from and to the inside of the anterior superior spinous process of the right ilium, and on the same level with it. Beyond this, the tenderness on pressure diminished. The daily record of the symptoms is given by Dr. Buck up to November 19, when he met Dr. Alonzo Clark and Dr. Markoe in consultation, with special reference to an operation.

The precise seat of greatest sensitiveness under digital pressure was once more determined and located, as it had uniformly been, by daily repeated previous examinations, midway on a line between the umbilicus and the anterior superior spinous process of the right ilium. After complete anæsthesia

and relaxation were produced by ether, the deep-seated outlines of the tumour were again confirmed by a more thorough palpation than had been admissible at previous examinations. At the point chosen upon the surface, a puncture was made through the skin with a bistoury, to facilitate the onward progress of a sharp-pointed cannula of the size of no. 1 bougie scale, which was advanced cautiously through the aponeurotic and muscular parietes of the abdomen to a depth of more than one inch, when pus escaped by the side of the cannula, and immediately afterwards through the cannula itself. The cannula, being held *in situ*, served as a guide, upon the outer surface of which a sharp-pointed bistoury was conducted into the cavity of the abscess, and the opening enlarged. At the same time the external wound was also enlarged by dividing the skin and underlying parts to the extent of nearly two inches. A dressing forceps was then introduced with closed blades, and withdrawn with the blades opened, so as to enlarge the entrance of the abscess. A free discharge of greyish foetid pus, without stain of bile, to the amount of more than an ounce, followed, together with an abundant escape of gas. A finger was next inserted into the wound to enlarge still further the opening and explore the cavity of the abscess, which was found to extend in every direction laterally beyond the reach of the finger; its opposite wall, however, was reached by the end of the finger, but nothing definite was ascertained by it. A plug of cotton-wick well greased was inserted, and left in the opening to maintain it free; and poultices were directed to be continued. In the evening, the patient was comfortable, and his pulse at eighty-four. Next day the plug was removed, and gave exit to a copious discharge of brownish matter, followed by thick laudable pus. The plug was thereafter kept in only during the day and left out at night. On the third day poultices were discontinued, and a dressing of simple cerate substituted. The abscess was injected with salt and water, and the injection was repeated on the two following days. On the fourth day a particle of greenish fecal matter, of the size of a split pea, was expelled with the injection. On the fifth, sixth, seventh, and eighth days small tufts of sloughy connective tissue were discharged, the suppuration continuing healthy and abundant. On the twelfth day suppuration no longer proceeded from the cavity of the abscess, but from the external wound alone, which was steadily filling up and contracting. The patient's general condition steadily improved, after the opening of the abscess, under the use of generous diet and the citrate of iron and quinine. On December 4 he was able to be removed to the house of a friend, and on December 17 the wound had healed, and patient resumed his out-of-door life.

The present case is the second in which Dr. Buck has successfully established an external opening in the abdominal walls for the evacuation of an abscess, by a modified procedure, differing in certain respects from the method originated and employed by Prof. Willard Parker in 1867, and repeated since by others.

FRANKEL ON A CASE OF URETHRO-RECTAL FISTULA PRODUCED BY THE FORCIBLE INTRODUCTION OF SOUNDS.—Dr. Edward Frankel, visiting physician to the Charity Hospital, New York, relates the following case in the *New York Medical Record* for January 8.

S. R., aged forty, a German, consulted Dr. Frankel last May for treatment of urethral stricture and cystitis. He stated that, aside from his venereal trouble, his general health had always been good. About fifteen years ago he contracted a gonorrhœa, which was neglected, and gradually subsided into a gleet discharge; about twelve years ago symptoms of stricture developed, for which he was treated by dilatation by various physicians. For ten years he has been in the habit of passing a no. 10 English sound at irregular intervals. About one year ago the stricture became very narrow, and cystitis developed, and he placed himself under the care of a physician, who used to pass a no. 12 English sound, and injected the bladder. Much force was used at each introduction, and the patient suffered much pain, and lost blood. The cystitis and trouble in passing urine became very much aggravated.

When Dr. Frankel first saw the patient, he was very nervous and feverish. He had had no sleep for several nights on account of having to pass urine about every half hour, and micturition was accompanied by severe pain in the perinæum, which radiated towards the back and right hip. A no. 12 sound was obstructed about half an inch in front of the bulbous portion of the urethra, and also at about the membranous portion. All attempts to pass this stricture by various instruments failed, the instruments showing a tendency to deviate toward the right, and there was evidently a false passage here. While the patient passed urine in a very small forked stream, a considerable portion of it came through the anus. Rectal exploration with the finger revealed a round depression, which felt like ulceration, immediately in front of the prostate, and about three-quarters of an inch in diameter. A no. 9 sound introduced into the urethra could be made to pass from about the membranous portion to the right into a false passage which led into the rectum. The patient was ordered warm hip-baths, poultices to the hypogastrium and perinæum, and opiates. The bowels were moved freely. The urine contained much pus; no casts were discovered.

On May 18 perineal section was performed in the usual manner. It was ascertained that urethro-rectal fistula had been caused by forcible sounding and the establishment of a false passage. The patient rallied well from the operation; he slept well and regained his appetite.

On June 28 the rectal opening of the fistula, around which considerable ulceration had taken place, was discovered to be situated about $1\frac{3}{4}$ inches from the anus. By means of Sims's probe, bent at a right angle for about an inch from its extremity and coated with nitrate of silver, the fistula was cauterised once every five days. Rectal examination on September 8 revealed that the fistula had very much diminished in size, and now appeared as a valvular opening, with soft and granular edges; it measured about half an inch transversely. Cauterisations were made as before, and cold sitz-baths and perineal douches were continued at home.

Towards the middle of October the fistula had not closed, and flatus continued to pass, sometimes by the meatus and sometimes by the small aperture in the perinæum. Dr. Frankel decided upon closing the fistula by means of sutures; and on October 20 the patient, being etherised, was placed on his left side; the sphincter ani was first thoroughly stretched by the thumbs, and then a two-bladed rectal speculum was introduced. A no. 16 sound was passed into

the bladder, so as to render the fistula more prominent in the rectum. By means of a curved pair of scissors, such as are used in the operation of staphylorrhaphy, the blades being bent at right angles to the handle, the edges of the fistula, which were raised as much as possible by a Sims's tenaculum, were freshened, and then three fine silver wire sutures were introduced, according to the method of operating for vesico-vaginal fistulæ. The patient had opiates to cause constipation. The operation was not followed by either fever or pain, he slept well, and there was no disagreeable sensation in either the rectum or bladder. The result was successful.

RECENT PAPERS.

- Foreign Body (Fork) in the Stomach: Gastrotomy: Cure. By Dr. Leon Labbé. (*L'Union Médicale*, April 27.)
 On the Operation for Vesico-Vaginal Fistula, according to M. Bozeman's Plan. By M. Paul Beyer. (*La France Médicale*, nos. 38 and 39.)
 On Improvements in the Treatment of Strictures of the Urethra. By M. Dolbeau. (*Bulletin Général de Thérapeutique*, May 15.)
 Encysted Abscess of the Abdominal Wall, simulating a Cyst of the Ovary. By Dr. Boinet. (*L'Union Médicale*, May 23.)
 Perforating Disease of the two Great Toes. By M. Morel. (*Lyon Médical*, May 21.)
 Note on the Operation for Phimosis. By M. Marc Sée. (*Le Mouvement Médical*, May 13.)
 On a Case of Cervical Spina Bifida successfully treated by Rizzoli's Method. By Dr. Parona. (*Annali Universali di Medicina e Chirurgia*, April.)
 On Fracture of the Os Calcis by Crushing. By Dr. Buzzarchi. (*Ibid.*)
 Two Lacerated and Contused Penetrating Wounds of the Soft Pleura and Hypochondriac Region; Recovery. By Dr. Oppizzi. (*Ibid.*)
 On the Use of Urethral Dilators for the Removal of Vesical Calculi. By Dr. De-Gattani. (*Ibid.*)
 Cancerous Wart of the Foot. By Dr. A. Gherini. (*Gazzetta Medica Italiana-Lombardia*, May 13.)
 On the Efficacy of the Carbolised Jute Dressing. By Dr. Köhler. (*Deutsche Medicinische Wochenschrift*, May 27.)
 Two Cases of Postero-External Luxation of the Elbow-Joint. By Dr. Erasmo De Paoli. (*Gazzetta delle Cliniche*, May 16.)
 On the Different Methods of treating Wounds in various Hospitals. By Oscar Bloch. (*Hospitals-Tidende*, May 3, 10, and 17.)
 On Spondylitis. By Professor A. G. Drachmann. (*Ugeskrift for Læger*, April 8.)
 Total Amputation of the Tongue by the Galvano-Cautic Loop. By Dr. P. Landi. (*Lo Sperimentale*, May 1.)
 Recurrent Double Small-Celled Sarcoma of the Cheek: Extirpation: Recovery. By Dr. L. Rebori. (*Ibid.*)

SYPHILOGRAPHY.

BOYLAND ON THE TREATMENT OF VENEREAL DISEASES BY SALICYLIC ACID.—Dr. Boyland (*American Journal of the Medical Sciences*, October 1875), recommends the employment of salicylic acid in the treatment of gonorrhœa, phagedæna, balanitis, posthitis, etc., as being diseases of parasitical origin and nature. He employs a solution of one part of acid to 100 parts of water for urethral injections and for lotions; and, in long standing cases of gleet, uses a concentrated solution of one part to five, injected by means of Guyon's graduated stem-syringe. Chancres are first freely cauterised and then dressed with charpie soaked in the one to 100 solution, and frequently changed. Suppurating buboes are opened under salicylic spray, and dressed antiseptically with

the one to 100 solution. Dr. Böyland also recommends the internal administration of the acid in addition to the local treatment.

FOURNIER ON EPILEPSY AS A SYMPTOM OF CEREBRAL DISEASE IN TERTIARY SYPHILIS.—In a course of lectures delivered at the Lourcine in Paris (*Union Médicale*, 1875, pp. 529, 618, 681, 717), M. Fournier lays down the following rules regarding the occurrence of epilepsy as a tertiary syphilitic affection. Epilepsy showing itself for the first time in an adult over thirty years of age, previously in good health, may, in nine cases out of ten, be set down as due to syphilis. The disease may manifest itself either as a true epileptic seizure, or under one of the milder forms known as the *petit mal*. The first seizure is followed at an interval of some weeks or even months by a second similar one, to be repeated at a somewhat shorter interval; the fits subsequently recurring more and more frequently, until there may be one every day. In the early stages, the patient remains in his usual health between the seizures; but later on, other symptoms of cerebral disorder show themselves. Thus, there is more or less gradual impairment of memory, followed by a curious state of mental apathy; the patient loses all power of mental application, and may finally become idiotic. The moral character is perverted and weakened; the patient is morose, and although usually tractable, becomes subject at times to fits of ungovernable temper, or even to maniacal attacks. He suffers from violent cephalalgia, is liable to vertiginous attacks, and may become aphasic; finally, localised paralyzes of either sense or motion may occur, frequently succeeded by more or less complete hemiplegia.

As regards the question of diagnosis, M. Fournier lays stress on the following points as indicative of the syphilitic origin of the disease:—1. Absence of the shrill cry which usually announces the outbreak of an epileptic paroxysm; 2. Occurrence of paralytic symptoms immediately succeeding the fit; 3. Incomplete or unilateral character of the paroxysm; thus there may be no loss of consciousness during the seizure, or one half only of the body may be convulsed, etc.; 4. The constant occurrence during the interval between the attacks of cerebral symptoms in some form or other, gradually increasing in severity. The previous history of the patient, as well as the age at which the disease first manifests itself, furnish most important data regarding the diagnosis, while the result of specific treatment should also be taken into account. W. A. MEREDITH.

CASPARY ON THE ANATOMY OF HARD AND SOFT CHANCRE.—Caspary (*Archiv für Dermatologie und Syphilis*, 1876, Heft 1) examined three indurated chancres microscopically, and believes that a histological difference can be observed between the two kinds of sore. In the indurated chancre there is a new formation of connective tissue, which in the case of the soft sore, on account of a continual process of degeneration, never develops.

The new tissue begins by a tense close network, which surrounds the cells, and develops into complete fibrillary bundles which cleave the new cell-formations.

DEAHNA ON THE INFLUENCE OF ERYSIPELAS ON SYPHILIS.—Dr. Deahna (*Archiv für Dermatologie und Syphilis*, 1876, Heft 1) states that a man,

twenty-seven years old, the subject of an extensive recent syphilitic exanthem, with affection of the mucous membrane of the throat and mouth, was seized with erysipelas attended with acute febrile symptoms. In seven days, all the manifestations of syphilis had disappeared. A second syphilitic eruption soon followed, but was much milder and left the part previously affected by the erysipelas free. In this condition a second attack of erysipelas supervened with moderate constitutional symptoms. In three days all traces of syphilis disappeared, and there was no relapse.

TAYLOR ON COMMUNICATION OF SYPHILIS BY VACCINATION.—In the *Archives of Dermatology*, vol. ii. no. 3, Dr. W. Taylor describes a case of syphilis in which the disease was conveyed to a child by a prison surgeon who vaccinated it with a scarificator, which had just been used in vaccinating a prostitute, and which was not cleansed before being used for the child. The contagion was supposed to be conveyed by the blood on the scarificator, as of the twenty persons vaccinated at the same time the only one who became syphilitic was this child who was vaccinated immediately after the prostitute.

RECENT PAPERS.

Congenital Syphilis from Paternal Infection. By Dr. A. Keyfel. (*Ärztliches Intelligenz-Blatt*, May 16.)

MATERIA MEDICA AND THERAPEUTICS.

RUTENBERG ON THE REDUCTION OF FEBRILE TEMPERATURES BY THE INTRODUCTION OF COLD LIQUIDS INTO THE BOWELS.—In the *Deutsche Medicinische Wochenschrift* for May 13, 1876, there is an article by Dr. D. C. Rutenberg of Vienna, containing the results of experiments on himself, and the trial of the same method on two patients suffering from intermittent fever. He remarks that Simon led the way by his proposal to inject large quantities of water into the bowel. Simon's paper was published in 1872 in Langenbeck's *Archiv*, Band xv. (1872), page 122. [In a previous article on this subject, the translator has shown that both Simon and Hegar only revived a practice and method which had long been used in England and France]. Hegar's method of using an irrigator, or even a simple funnel and long tube, was published in the *Deutsche Klinik* for 1873, p. 73. It thus became possible to introduce water at various temperatures into the abdomen. The copious blood-supply and the warmth of that cavity seemed to promise a favourable result to attempts at influencing the general temperature in this way [see Liebermeister's 'Handbuch der Pathologie und Therapie des Fiebers,' p. 55]. The iliac vessels and their ramifications are at once most directly exposed to the cooling influence of the water injected. And then it was not unreasonable to suppose that the influence would extend not only to the intestinal and peritoneal vessels, but even to the aorta and vena cava inferior. And very lately Kemperdick of Kolmar, with the same view of 'cooling the blood in the abdominal cavity,' carried out this object in a patient suffering from typhoid fever, by introducing a bladder into the rectum, through which by means of an irrigator he kept up

a current of rather cool water (9° to 12° Réaumur = 52.25° to 59° Fahr.). The result appeared, however, to be that only the temperature of the pelvis was affected, and in one instance this bladder burst. (*Berliner Klinische Wochenschrift*, 1873, p. 112.) That large quantities of water could be introduced a long way up the bowel was not then generally known. It is not very easy to keep up a constant current in this way, since the return-tube or catheter could not well be introduced so far as the fluid itself, so that it would be difficult to ensure uniformity of temperature in this way; more particularly in the position of the patient lying on the right side, desirable for other reasons, we could scarcely expect the warmed water from the ileo-cæcal valve to find its way out to the anus. It therefore seems better to introduce the water as cold as possible, to allow it to acquire the temperature of the body, and then, after letting it

escape, to introduce a fresh quantity. The experiments of Dr. Rutenberg were made on himself in the winter of 1874-5. He says that the injection of iced water into his bowel was not the least unpleasant, indeed, he thought the bowels less disposed to contract spasmodically than when smaller quantities of water were introduced of the customary warmth. The temperature was taken in the mouth, the thermometer lying between the cheek and the gum, and being fixed by a head-band, in order that, when read by means of a lens, it might not be shifted. When it was gripped more than usually firmly, there was a slight but evident rise in the mercurial column, just as noted by Liebermeister in the axilla. The instrument was nearly all the time in the mouth, and no reading is given from less than ten minutes *in situ*. Talking, etc. was avoided for obvious reasons. The first table is as follows.

TABLE I.

Experiment	Quantity of water injected	Time of day	Temperature before experiment	Temperature immediately after	The same for each quarter of an hour afterwards				
I.	2.2 pints	6 p.m.	100.22° F.	98.24° F.	98.42° F.*	98.96° F.	98.96° F.	99.32° F.	
II.	3.08 "	10 a.m.	99.14° F.	96.44° F.	96.8° F.*	96.44° F.	96.98° F.	97.34° F.	97.52° F.
III.	2.2 "	6 p.m.	100.58° F.	98.42° F.	98.42° F.	98.6° F.*	98.42° F.	98.96° F.	98.96° F.

The temperature of the water was 32° Fahr. or only a trifle above. The injection lasted 20 to 30 minutes. When the fluid came away, a portion of it appeared to be retained. In the second and third experiments, after a rise there was a fresh fall, as if

the cooled water had entered a fresh part of the bowel. The asterisks show when the bowels acted. In the next three experiments the thermometer was not disturbed at all, and was read every five minutes :

TABLE II.

Experiment	Temperature of water	Quantity of water	Time of day	Temperature		Fahrenheit each successive five minutes									
IV.	41° F.	1.76 pints	4 p.m.	97.16°	97.16°	96.9°	96.9°	96.9°*	97.16°	96.98†	96.62°	96.26°	95.36°	95.1°	95.19°
V.	38.75 F.	17.5 ozs.	11.10 a.m.	96.98°	96.9°*	96.85°	96.85°†	96.45°	96.2°	96.2°	96.26°	96.26°	96.4°		
VI.	36.5 F.	17.5 "	4.10 p.m.	96.8°	96.9°	96.9°	96.98°	96.9°*	96.7°†	96.45°	96.08°	96.20°			

* and † signify the beginning and end of the injection. There was no action of the bowels until after the readings of the thermometer.

The prompt reduction of temperature by this method of introducing cold water is obvious at the very first glance. In the second experiment the temperature fell about 1.5° C. = 2.7° F. in twenty-five minutes only, during the operation of the fluid.

There is thus a striking contrast between this method and that of the cold-bath system, during which Jürgensen found that a cold of 9° to 12° (52° to 59° Fahr.) applied for twenty-five to thirty minutes only lowered the temperature of the body about 1.4° = 2.5° Fahr., whilst he had the greatest difficulty in inducing people to submit to such torture (see the *Archiv für Klinische Medicin*, Band ii. p. 334, etc.) Liebermeister also points out that cool drinks and clysters (of the latter he only gives one example) cool the body from within, whilst the first effect of cold baths is to slightly raise the temperature. Experiments IV. and V. show slight elevation of temperature, perhaps accidental. The reduction of the general temperature by $1\frac{1}{2}^{\circ}$ C. = 2.7° Fahr., during the injection of less than three pints of water at freezing-point, shows no increase of warmth production.

One great advantage of this method is, that, unlike that of cold baths, its action is not impeded by the corpulency of the patient.

As regards calorimetry, the actual abstraction of heat in the fourth experiment could scarcely be more than thirty calories. But the thermometer gives for the body a loss of $66 \times 0.83 \times 1.1 = 60.2$ calories (Dr. Rutenberg's weight in kilos *into* his warmth capacity or specific heat *into* the fall in the thermometer) in thirty-five minutes; whilst we could only expect one of $\frac{30}{66 \times 0.83} = 0.547^{\circ}$ C., or a fall of

0.9846° Fahr. or less than 1° Fahr. instead of 1.98° Fahr. He notes that a few seconds after the injections there were slight rigors. Dr. Rutenberg does not think we are justified in assuming that the thermometer (say in the cheek) registers the mean temperature of the body. Parts like the brain are probably reached but slowly by changes in temperature. As regards the trial of the method in disease, two observations are given, made by Dr. Rutenberg, on two strong young patients suffering from intermittent fever, during the last summer at Strasburg.

TABLE III.

Afternoon	First Trial. Fahrenheit	Remarks	Evening	Second Trial. Fahrenheit	Remarks
2'30	105'98°	At 2'35 p.m., first injection of about three pints of water at 34'2° Fahrenheit	7'20	103'46°	Injection of 2'6 pints of water at 34'2° Fahrenheit
2'45	105'44°	Action of bowels. Three more pints injected	7'25	103'46°	
3'	105'10°		7'30	103'82°	Discharge of fluid, and fresh injection as above
3'15	105'62°		7'35	103'55°	
3'30	105'44°	All the water returned	7'40	103'46°	
3'45	105'62°	Fresh injection of 1½ pints	7'45	102'92°	
4'	105'62°	All returned. 1½ pint injected again	8'15	102'56°	
4'15	105'26°		8'30	101'84°	
4'45	104'72°	As above	8'41	102'02°	
5'	104'36°		10	102'30°	

These tables show, in the first case, in which there was a strong rigor an hour before commencing the trial, a fall in twenty-five minutes of about $\frac{1}{2}^{\circ}$ C. = 1° Fahr. If we allow that but for the injections, the temperature would have risen 42° C. = 107° Fahr., we have here in $2\frac{1}{2}$ hours a reduction of 2° nearly Centigrade = 3° Fahr. In the second case, there is a slight temporary rise = 2° C. = 4° Fahr. nearly after the first injection. The rigors in this case had occurred at 2.30 noon. Dr. Rutenberg notes that the same thing has been noted in health. He justly says that in the later stages of typhoid fever, the ulcers in the bowels might render it dangerous to inject very large quantities of water. [The translator has to regret that the Centigrade and Réaumur scales are so oddly and almost inextricably mixed up together in this article, that he has had great difficulty in making sure which was meant in any particular line. He believes, however, that his rendering will be found correct. Dr. Rutenberg appears not to have seen the papers of Dr. Wilson Fox and others on the use of tepid baths in very high temperatures. There can, however, be no reasonable doubt that the method of injecting iced water, or very cold water advocated here, is likely to be of great service in suitable cases. In two cases of hæmorrhage in enteric fever, and in two others of the same event in dysentery, the translator used this method with success.—*Rep.*]

W. BATHURST WOODMAN.

MEYER ON THE SOPORIFIC ACTION OF LACTATE OF SODA.—Dr. L. Meyer gives in Virchow's *Archiv* (Band lvi. Heft 1) the results of his inquiry into the validity of Preyer's hypothesis that sleep may be induced by the production of fatigue-products in the body (*Centrablatt für die Medicinischen Wissenschaften*, no. 35, 1875). To this end lactate of soda is administered. It is a clear yellowish-white syrup of sp. gr. 1'325 of pleasantly acid taste.

The cases experimented upon were various incurable diseases of the sexual and nervous system, all in females. All had been accustomed to a continual or occasional administration of morphia. The lactate was first administered subcutaneously, 0'6 grammes two or three times daily. The result was not encouraging. The injection caused pain in the part, and nausea or vomiting, without producing sleep or even ease. A larger dose by the mouth, 10 to 15 grammes, gave better promise. Some still had nausea or vomiting, but all got some relief from pain. It was afterwards found necessary to vary the administration of the drug, according as it appeared to

act upon the nervous or digestive system in particular cases. Sometimes it was combined with small doses of morphia. By means of this discrimination the effects were much more satisfactory. Preyer advises that the salt should not be kept as a syrup, but made when wanted by adding lactic acid to carbonate of soda (10 or 15 grammes of the latter are first dissolved in warm water, and lactic acid added till neutralisation is effected). The solution may then be given as a drink with milk and sugar, or with extract of beef. Meyer concludes that the value of the drug, so far as his observations go, is shown in the diminution of the requisite dose of morphia. If the lactate be given, the quantity of morphia required is much less, and so far it is of value. Latterly, at Virchow's suggestion, lactic acid alone has been given with results quite similar to those where the salt was given.

JAMES F. GOODHART, M.D.

GUBLER ON THE THERAPEUTIC ACTION OF HYDROBROMATE OF QUININE.—M. Gubler has made successful trials of hydrobromate of quinine injected hypodermically in intermittent fever (*Paris Medical*, May 4, 1876). The dose of eighty centigrammes given in three days sufficed completely to cut short the attack. The injection given two hours before the attack served to hinder its arrival. The facts communicated by M. Seulez (of Romorantin) completely confirm the rapid action of this new salt of quinine. He injected each time eighteen centigrammes of the hydrobromate of quinine dissolved in water slightly alcoholised.

GRZYMALA ON THE TREATMENT OF HYDROPHOBIA BY THE XANTHIUM SPINOSUM.—In a letter addressed to M. Gubler (*Paris Medical*, April 20, 1876), Dr. Grzymala points out the infallible properties of the xanthium spinosum in the treatment of hydrophobia. This affection is very common in Podolia, where Dr. Grzymala practises, and in the many cases where that physician has been able to administer the xanthium sufficiently early, the rabic virus has always been neutralised. The remedy must be administered early, before the attack has declared itself. The xanthium spinosum, a plant common in the middle of France, is a sudorific, a sialagogue, and a feeble diuretic, which generally produces only one or other of these effects, and not all together. The temperature is quickly raised, and the circulation slightly quickened. Sometimes some headache, nausea, and vomiting supervene during the day. The appetite is generally increased. The dose for an adult is from sixty centi-

grammes of the dry powder of xanthium, repeated three times a day, and continued for three weeks. Children under twelve take half. Dr. Grzymala has cured in this manner a large number of persons and animals bitten by dogs manifestly mad, whilst other animals bitten by the same dogs and treated by other methods succumbed with all the symptoms of hydrophobia. W. DOUGLAS HEMMING.

VON LIEBIG ON THE CURATIVE RESOURCES OF REICHENHALL.—In this paper (*Aertzliches Intelligenz-Blatt*, April 25, 1876) Dr. G. von Liebig gives an account of the water which is used at Reichenhall for drinking, in lieu of a natural salt spring. It is artificially prepared by diluting the Edel well with water, and by charging it with carbonic acid. The water contains about 9 per cent. of salt, and may be regarded as an imitation of the Rakotsky of Kissingen.

It is unnecessary to enlarge on the well-known effects of such springs, but Dr. Liebig calls attention to what has been less observed—the direct assistance which they give to the digestion or the solution of articles of diet. He has repeatedly observed, in himself and in others, the relief afforded to the stomach by taking a moderate glass of the water, when it has been disordered by rich food or by nervous causes. The feeling of nausea rapidly disappears, and is succeeded by appetite.

The physiological reason of this is perhaps explained by Dr. O. Nasse; he found, in making experiments with ferments, that the power of the human saliva or of the pancreatic juice to convert starch into sugar was increased about 12 per cent. by the addition of common salt in small quantities. Heidenheim also found that the solution of fibrine in gastric juice is distinctly accelerated by the addition of only one-tenth per cent. of common salt or of carbonate of soda. This acceleration is not increased by the addition of a greater amount.

Another portion of the success of similar waters in gastric and intestinal catarrhs is to be attributed to the local action of weak solutions of salt on the mucous membranes. Dr. Liebig, following in the steps of what has been done at Soden, has studied the application of the Reichenhall water in cases of granular pharyngitis and of nasal catarrh. For local application, the water is either used as a gargle, or pencilled, or injected by a pulverising instrument. By a little arrangement, the breathing may be so managed, that the mucous membrane of the larynx is reached by the spray.

The inhalation rooms for pulverised salt water are also used at Reichenhall with much advantage in affections of the larynx, in bronchitis, and in chronic pneumonia, and patients express great relief from using them, although the theory of how they prove beneficial is by no means clear. Besides the salt present, the air of the inhalation room contains 10.15 per cent. more moisture than the open air, or that of the graduating houses. The two together seem undoubtedly to exercise a soothing action on irritation of the mucous membranes associated with dryness.

Besides this, there is undoubtedly an unusual development of ozone in the air near graduating houses; and, indeed, it has been observed in the neighbourhood of the pulverised water of ordinary fountains. Dr. Liebig has made experiments on the quantity of ozone, which he means to continue, and meantime only remarks that under ordinary cir-

cumstances no ozone reaction would be observed in a room filled with people, like the inhalation room, as people rapidly use up all free ozone; whereas his experiments show that the air of the inhalation room, though it was full of people, contained a larger amount of ozone than the best outside air, and thus seemed to produce more ozone than was required for consumption. But the whole subject requires further examination.

[The manufacture of a palatable salt water at Reichenhall by the aid of carbonic acid affords a hint for the employment of the Droitwich and other salt-springs in Great Britain.—*Ref.*]

J. MACPHERSON, M.D.

STARKE ON THE USE OF OLEUM ERIGERONTIS CANADENSIS IN THE TREATMENT OF GONORRHŒA. Dr. G. A. Starke, of Milwaukee, calls attention in the *Canada Medical and Surgical Journal* for May, to a remedy which he has been using for four years, in the treatment of gonorrhœa—the oil of the Canada fleabane (*oleum erigerontis Canadensis*), very briefly noticed in works on materia medica. The results in most cases in which he has prescribed the oil, the patient adhering strictly to directions, have been entirely satisfactory, and in some cases astonishingly so. In the majority of the cases the discharge ceased in from two to six days. He has only taken notes of its effects in what he considered true cases of gonorrhœa. After having administered some suitable purgative, generally saline, he then gives the medicine in doses varying from five to twenty drops, every two, three, or four hours, as judged most prudent in each particular case. He has also given the oil in several combinations. The diet is also to be carefully regulated.

MILLER ON REDUCTION OF ENLARGED SPLEEN BY THE HYPODERMIC INJECTION OF ERGOT.—In the *New York Medical Record* for April 15, Dr. J. H. Miller relates the case of a lady, aged twenty-eight, whom he found suffering from masked intermittent fever with great enlargement of the spleen, occupying the abdominal cavity from the extreme left to the middle of the right hypochondrium, and from the umbilicus to the epigastrium. Quinine, chloride of ammonium, and iodine, with iodo-croton liniment, were used without effect; and Dr. Miller therefore determined to use ergot. On February 6 he made the first hypodermic injection of ergot. He visited her again on the 7th, and made the second injection; and, although he did not find any diminution in the size of the spleen, yet he discovered a very sensible change in its character and consistency. On the 8th he made the third injection, and at that visit there was a very perceptible shrinking. On the 10th he made the fourth insertion, and found a very decided diminution in its size; and for four consecutive days he made injections with rapid and marked diminution. On the 14th it had almost attained its normal size. Thus, from the 6th to the 14th, that enormous spleen had almost entirely disappeared under the hypodermic use of ergot alone. On March 4 he found the spleen normal.

DOUBELIR ON THE ACTION OF MERCURY.—Dr. Doubelir, of St. Petersburg (cited in the *Gazette Médicale de Paris*) gives the following summary of the results he has obtained by experiments on the action of mercury.

1. Mercury is a cardiac poison.
2. Death when produced by mercury is due to paralysis of the heart.

3. Mercurial epilepsy is connected with uremic poisoning.

4. The theory according to which mercury increases the metamorphosis of the tissues is very probably true.

5. Mercury should be given in large doses in inflammatory diseases.

6. It should be given in small doses in chronic affections where there is exudation.

RECENT PAPERS.

On Aeropathy. By Dr. Paul Spillmann. (*Revue Médicale de l'Est*, pp. 169, 204, 278, 305, vol. v.)

Critical Reflections on the Influence of Iron in the Treatment of Chlorosis. By Dr. Dujardin-Beaumetz. (*Bulletin Général de Thérapeutique*, May 15.)

The Determination of the Active Constituent of Ergot. By Dr. R. Bucheim. (*Berliner Klinische Wochenschrift*, May 29.)

Salicylic Acid in Articular Rheumatism. By Dr. O. Schreger. (*Ärztliches Intelligenz-Blatt*, May 23.)

Clinical Observations on the Treatment of Acute Rheumatism by Salicylic Acid. By Dr. Schumacher. (*Deutsche Medicinische Wochenschrift*, May 6.)

Physiology of Diuretics. By Dr. T. C. Smith. (*Detroit Review of Medicine and Pharmacy*, May.)

PSYCHOLOGY.

MCDIARMID ON THE HYPODERMIC INJECTION OF MORPHIA IN INSANITY. — Dr. McDiarmid (*Journal of Mental Science*, April, 1876) has published a most exhaustive paper on the application of morphia subcutaneously in insanity.

Pointing out the disadvantages of giving this drug by the mouth, Dr. McDiarmid reminds us that it runs considerable risk of being altered, and having its virtues impaired, by the gastric secretions, or by the constituents of food. Even if it have escaped the action of the gastric juice, and have passed into the blood (as all such crystalloid substances are supposed to do), it has to go the round of the portal circulation and pass through the liver-cells. And even if the hepatic structures have no effect on it, it may have a prejudicial action on them, just as alcohol and other substances have; while opium is well known to check the secretion of bile, an action which may not be desirable at a time when its other properties are useful.

We can accurately observe the amount of morphia introduced into the system subcutaneously, and we can also give a definite dose hypodermically to a patient who refuses to swallow medicine.

And, as is well known to experimenters, many substances produce their effect much more rapidly when given subcutaneously than when given by the mouth, and speedy action is frequently most desirable in insane paroxysms.

Dr. McDiarmid has treated melancholia, acute mania, and the excitement of general paralysis most successfully by this method. It was also found of great service in improving patients of incorrigibly dirty habits.

When morphia is long in being followed by sleep, warm baths, or a small dose of tincture of cannabis Indica (℥xx to xxx) may be advantageously used as adjuncts.

In a continuance of the hypodermic treatment, it is necessary steadily to increase the dose. The rate of habituation in the generality of individuals is estimated at gr. $\frac{1}{60}$ or $\frac{1}{60}$ a day.

Vomiting occurred thirty-seven times in 413 injections, and this symptom was observed to take place most commonly when the drug was administered in the morning (of thirty-seven vomitings, twenty-three occurred in the morning), about an hour after breakfast. Any disordered condition of the stomach invariably caused vomiting with morphia.

Of the means employed to check vomiting strong coffee was found the most useful. Its effects are, however, transient. But the combination of atropia with morphia was more successful. Two cases of melancholia—one of which had vomited after $\frac{1}{4}$ gr. and the other after $\frac{2}{5}$ gr.—were injected with $\frac{1}{4}$ gr. and $\frac{2}{5}$ gr. of morphia combined with $\frac{1}{60}$ gr. of atropia. In neither case did vomiting occur after this administration. The atropia and morphia together were given in the evening, whilst the doses of the opiate which caused vomiting were given in the morning.

In the insane, Dr. McDiarmid advises that morphia should not be employed hypodermically in persons labouring under heart disease, or exhibiting any symptom which indicates serious brain disease, general paralytics excepted.

In melancholic females, Dr. McDiarmid has found it best to begin with $\frac{1}{60}$ gr. of the acetate of morphia (equivalent to about 14 minims of the liquor morphiæ acetatis B.P.), not oftener than once in twenty-four hours, and he has never found it necessary to increase the dose beyond $\frac{1}{4}$ gr. In melancholic males the dose generally begun with is $\frac{1}{8}$ gr. once a day, and all the sedative advantages of the remedy are usually gained without going beyond $\frac{1}{4}$ or $\frac{1}{8}$ gr. In acute mania $\frac{1}{4}$ to $\frac{1}{3}$ gr. may be given for a first dose, and in robust individuals $\frac{1}{2}$ gr. may be administered with safety. In recurrent mania $\frac{1}{3}$ to $\frac{1}{4}$ gr. is all that is necessary to secure quiet sleep. In the paroxysms of chronic mania, $\frac{1}{60}$ to $\frac{1}{4}$ gr. has the requisite calmative influence. General paralytics require and bear the largest doses; and in one case Dr. McDiarmid increased the daily amount to $\frac{1}{2}$ of a grain.

It must be remembered that it is very rarely necessary to give the morphia hypodermically oftener than three or four times consecutively, and only once was it given on more than nine successive evenings.

Of all the hypnotics and sedatives employed in this investigation, morphia, hypodermically administered, was found the most certain and speedy, being successful 329 times in 394 injections, the proportion of failures being about 16 per cent.

Dr. Clouston's favourite combination, tincture of cannabis Indica (℥xl), and bromide of potassium (30 to 40 grs.), was given eleven times successfully—twice it failed. Dr. McDiarmid considers that it is no doubt a very certain form of sedative, but it unfortunately causes so much stupor, confusion of ideas, and such paresis of the motor nerve-centres (after sleep is over), that it is a very dubious remedy in frequent doses.

Chloral comes next to morphia as by far the most potent soporific, the failures being 26 per cent. Although an invaluable hypnotic, chloral has the great disadvantage of exercising no sedative action. Tincture of cannabis Indica was a much better sedative than chloral, but exhibited very little soporific tendency in ordinary doses. Dr. McDiarmid is of opinion that bromide of potassium is too unreliable a sedative to be used with much benefit in insanity.

These experiments were made with a solution of acetate of morphia in distilled water, acidulated with

a few drops of glacial acetic acid, and having any excess of acid neutralised by liquor potassæ. The site of puncture was over either deltoid, from convenience of access, and as being free from veins.

If we are to estimate a mode of treatment, writes Dr. McDiarmid, by its success in aiding the restoration of the brain to a healthy condition, then the hypodermic method was most valuable in acute mania. As a sedative its benefits were, perhaps, felt most in melancholia.

H. SUTHERLAND, M.D.

MENDEL ON THE CAROTID PULSE.—The application of the sphygmograph to the carotid pulse of insane patients has been studied by Dr. Mendel, physician to the asylum at Pankow, and the results of his observations are given in Virchow's *Archiv*, vol. lxvi. p. 251. The normal carotid pulse, which is short and tricrotous (*Pulsus celer tricrotus*), is found in a certain proportion of the patients, including both old and recent cases of mania, melancholia, paralysis, and dementia. In a second series, the long pulse of atheroma (*P. tardus*) is found both in the carotid and in other arteries; the patients are mostly elderly, suffering from paralytic dementia, and other forms of disorder accompanied by considerable trophic disturbances. In some cases of unilateral cerebral disease—e.g. hemiplegia—the carotid pulses are different on opposite sides, that on the side of the lesion giving an abnormal tracing. In a third series, the pulse, naturally tricrotic in the radial, is dicrotic in the carotid artery; this is to be ascribed to dilatation of the capillaries and small arteries of the encephalon, and is observed in certain stages of progressive paralysis. But the great majority of the insane, especially melancholiacs, have pulse-tracings in which one or both secondary waves are increased in size, or an additional wave is present. These alterations are referred to increased recoil from the aortic valves as a result of obstruction in the cerebral capillary and venous circulation; that they occur only in the carotids is explained by the relations and proximity of these vessels to the valves in question.

[The value of the tracings accompanying this paper is lessened by the want of any record of the pressure employed in each case.—*Rep.*]

F. TAYLOR, M.D.

RECENT PAPERS.

The Premonitory Symptoms of Paralytic Insanity. By Dr. W. Sander. (*Berliner Klinische Wochenschrift*, May 22.)

OBSTETRICS AND GYNÆCOLOGY.

DUGAS ON THE TREATMENT OF MAMMITIS AND MAMMARY ABSCESS.—Dr. L. A. Dugas treats these affections by bandaging. He describes his method in a paper read before the Medical Association of Georgia (*New York Medical Record*, April 1, 1876). To lessen the determination of blood to the mammae while inflamed, the child is to be suckled as seldom as possible, and gentle compression, sufficient to force out the blood from the distended vessels, and cool applications to the organ, are the proper remedies. He has devised a bandage which, he believes, combines all the requisites. It consists of cotton or linen shirting, about ten inches wide, and long enough to surround the thorax, and

to be secured in front by digitations similar to other 'many-tailed bandages.' This is to be applied from the axilla downwards round the chest and over the mammae, and to be tied in front of the sternum. It effectually compresses both organs, and can be loosened or tightened without any difficulty. The child may be nursed through an aperture for the nipple made in the bandage. As soon as the congestion becomes painful or threatening, the bandage should be applied with such moderate tightness as will relieve pain, and the treatment should be continued until the trouble has been entirely subdued. When suppuration takes place, the pus should be let out by the free use of the bistoury, and a linen tent renewed daily. There should also be an opening in the bandage opposite the incision for the escape of pus. This bandage is adapted to every stage of mammary inflammation. If too late to prevent suppuration, it will lessen the size of the abscess, and after an opening has been made for the escape of pus, it will bring together the walls of the abscess, and hasten the cure. One of its greatest advantages is that it relieves the patient of all pain as soon as it is applied, by removing the distension to which the unsupported tissues are subjected by the congestion, or by the accumulation of pus.

KÖBERLÉ ON THE DIFFERENTIAL DIAGNOSIS OF SUBPERITONEAL SEROUS CYSTS, AND OVARIAN SEROUS CYSTS, BY THE NATURE OF THE FLUID.—This is the title of a communication read to the Medical Society of Strasbourg by M. Köberlé (*Paris Medical*, March 30). The diagnosis rests on the presence or absence, in the liquid contents of the cysts, of albuminous compounds, albumen, metalbumen, and, above all, paralbumen. The last-named substance is the one which is found in the largest proportion. The albumen is precipitated by nitric acid, and the precipitate remains or even increases on the addition of acetic acid. The paralbumen is also precipitated by nitric acid, but the precipitate is redissolved on the addition of acetic acid. As for the metalbumen, it exists in these liquids in such small proportions that it may be left out of consideration.

Now the cysts of the broad ligament do not ordinarily contain any albuminous compound. The cysts of the ovary, on the contrary, furnish a liquid charged with albumen, and, above all, with paralbumen. The cysts of the Fallopian tube contain only albumen, and no paralbumen. Nevertheless, exceptional cases exist, where the reactions are less distinct, and even lead to error; there is no absolute rule. If the trocar give exit to a thick liquid or a greasy liquid holding detritus of epidermis and hair in suspension, the cysts certainly belong to the ovary. There are colloid and dermoid cysts which contain no albuminous compounds. The physical aspect of these liquids suffices for their diagnosis.

W. DOUGLAS HEMMING.

CHURCHILL ON SOME CASES OF RETAINED OVUM.—In the proceedings of the Dublin Obstetrical Society for March 1876, Dr. Fleetwood Churchill relates six cases of retained ovum, which, he says, are of not unfrequent occurrence, although he has no means of computing the comparative frequency of such instances. The diagnosis is not easy for several reasons; there are no ordinary symptoms of pregnancy, the patient may say she is 'regular,' that she has lately miscarried, or that she is certain she

is not pregnant. In all the six cases, the usual signs of pregnancy were absent. Hence Dr. Churchill thinks it justifiable, on the ground of diagnosis, to adopt what he believes to be the best mode of treatment, that is, the introduction of the sound and the administration of ergot. If the uterus contain nothing, but is enlarged from other causes, the sound and ergot will be harmless, nor will they interfere with such other treatment as may be indicated. As Dr. McClinton has observed, when the ovum is macerated or putrid there is rarely any hæmorrhage. One of Dr. Churchill's cases was an exception, and she was the only one who failed to make a rapid recovery. Dr. Churchill regrets that in none of the six cases can he fix, with any accuracy, the duration of time of the retention. In all but one, the membranes had been ruptured long before expulsion, but in none was there any fœtor of the discharges. In Case 1, the marked symptom was recurrent uterine hæmorrhage; ergot expelled the shell of an ovum; the fœtus was absent. In Case 2, there was enlargement of the uterus; the ergot expelled an ovum of near three months. In Case 3, there were no symptoms of pregnancy; the os was wide and granular; the sound was used, and a macerated ovum of two months escaped within twenty-four hours afterwards. In Case 4, there were no symptoms of pregnancy; the os was wide and granular; the patient was treated for endometritis; at the end of two weeks violent flooding supervened, which was arrested by plugging; it returned, ergot was given, and the next morning a macerated ovum of three months was thrown off. In Case 5, there were no signs of pregnancy; the patient suffered from a uterine discharge of pale red colour, appearing irregularly. The sound was passed through a wide os, and two days later a macerated fœtus of about four months was expelled. In Case 6, there was a tumour between the pubes and umbilicus; no fœtal heart-sounds were audible; menstruation was slight and irregular. While debating in his mind whether he would pass the sound, Dr. Churchill was sent for to the patient, and found a macerated fœtus of four months in the bed.

BURDEL ON 'TELLURIC CARDIAC NEURALGIA DURING PREGNANCY.—Dr. Edouard Burdel (*Annales de Gynécologie*, May, 1876), relates two cases of telluric cardiac neuralgia occurring during pregnancy. The first case was seen by Dr. Burdel the day before labour set in. He found the patient with a pulse so rapid that it was impossible to count it; it felt like a vibrating cord, and the heart-sounds were indistinct and tumultuous; the skin was warm and moist. As she was on the verge of labour, Dr. Burdel merely gave an anodyne sedative. The next evening Madame X. was delivered before Dr. Burdel arrived, and told him she felt at ease in every way. Dr. Burdel, however, on examining the organs of circulation, found that the same alarming condition of the pulse remained. In addition, she was seized with vomiting and purging, which Dr. Burdel, not having a hypodermic syringe, could not allay. The patient died the next day.

In the second case the same symptoms showed themselves fifteen days before term. Dr. Burdel, bearing the last case in mind, at once injected a solution of one gramme of sulphate of quinine in six grammes of brandy over the epigastric region. The patient immediately became more sensible; and after the sixth injection the pulse fell to 175. The patient

slept for an hour, and awoke with a pulse of 150. Next morning the pulse was 130; Dr. Burdel repeated the injection, and in the evening he gave two more injections, containing each 0·75 centigramme of sulphate of quinine. He could now distinguish the fœtal heart which had been inaudible the day before. The patient quite recovered, and was delivered at term, twelve days after Dr. Burdel's first visit, with the most happy result.

Dr. Burdel, in discussing these cases, remarks that where there is a telluric influence in the background, as there was in these cases, quinine in large doses may be given with marked results. Had it been administered in the first case, Dr. Burdel thinks the result would have been different. This condition has been mistaken for angina pectoris, embolism, etc. Dr. Burdel, in conclusion, says that quinine may be given in large doses during pregnancy with safety both to mother and child, and denies that it possesses the ocytotic action which has been laid to its charge.

PENROSE ON THE TREATMENT OF FACE-PRESENTATIONS.—The American supplement to the *Obstetrical Journal of Great Britain and Ireland*, April, 1876, contains a paper by Dr. R. A. F. Penrose on the treatment of face-presentations. The author believes that the act of rotation forwards of the chin, which is the critical stage in face-presentations, is not effected in many cases, merely from the absence of a *point d'appui* upon which to rotate. Supply this, and rotation takes place. The floor of the pelvis is the natural *point d'appui* upon which the face should rotate, but the face is unable in many cases to descend so far, and remains jammed. In these cases Dr. Penrose supplies the wanting factor in this mechanism by opposing the hand, the blade of a forceps, or the lever to the posterior cheek; rotation then takes place and the child is born. To illustrate this, he relates a case of mento-posterior presentation, where the most powerful uterine contractions had failed to propel the child through a roomy pelvis during a struggle of thirty-six hours. He introduced a blade of a forceps and held it firmly against the posterior cheek, the chin rotated 'at once,' and the child was born in less than five minutes.

GALLARD ON THE TREATMENT OF INTERNAL METRITIS.—Dr. Gallard (*Annales de Gynécologie*, May, 1876), in speaking of therapeutic agents introduced into the uterine cavity, remarks that they are almost useless if in a solid form, for they cannot reach the corners and dippings-down of the uterus; he therefore uses liquid injections only, and has hitherto confined himself to the three following—solution of perchloride of iron, tincture of iodine, and solution of nitrate of silver. He most frequently uses the perchloride of iron. Nitric acid he considers too dangerous to be injected into the uterus. These injections are administered by means of a series of caoutchouc tubes of different sizes, which fit on to a syringe graduated to measure the quantity injected.

Dr. Gallard selects a tube small enough to allow of a reflux of the fluid. Where there is merely a congestion or excessive vascularity of the uterus, he recommends cold hip-baths and cold vaginal irrigations.

If the mucous membrane be thickened and ulcerated and beginning to be covered with granulations, Dr. Gallard thinks it necessary to check its vitality by some caustic fluid, such as perchloride of iron. Where there are vegetations, either sessile or

pedunculated, the cervix must be dilated by laminaria digitata, and the vegetations scraped off with Récamier's curette.

FANCOURT BARNES, M.B.

BAUM ON A CASE OF OVIARTOTOMY PERFORMED DURING ASCERTAINED PREGNANCY.—A case of this kind is related by Dr. Wilhelm Baum in the *Berliner Klinische Wochenschrift* for March 27. The patient, aged nineteen, had been married two years. In April, 1874, she was delivered normally of her first child, but her abdomen remained large from that time. From the end of January, 1875, the menses again ceased, and the enlargement of the abdomen rapidly increased. At the end of May the legs became cedematous, and the respiration was so much affected as to produce orthopnoea. An examination was made on June 9. The abdomen was then enormously distended, having a network of enlarged veins on the surface. It was universally dull, except that, in the side position, some slight resonance could be discovered in the uppermost flank. Fluctuation was felt throughout. By vaginal examination, the uterus appeared to be enlarged, and the cervix somewhat open. A uterine souffle was heard, but no foetal heart sounds. A diagnosis was made of an ovarian cyst complicated by pregnancy and ascites. Paracentesis was performed, and a painful of viscid fluid removed. Some movable solid masses were afterwards felt on the left side of the abdomen. The cyst filled again very rapidly, and on June 25 the operation of ovariectomy was performed under carbolic acid spray, all the precautions recommended by Lister being observed. Anaesthesia was produced by bichloride of methylene, administered with Junker's apparatus. The incision through the abdominal wall was four inches and two-thirds long, ending two inches above the symphysis. Some ascitic fluid escaped as soon as the peritoneum was divided. The gravid uterus was then seen, overlapped by a large globular tumour. After one thin-walled cyst had been emptied, it was found that adhesions to the abdominal wall and omentum prevented its being drawn out. These were separated by the hand, and a number of smaller cysts, containing very thick gelatinous fluid, were then broken up, and their contents cleared out with the fingers. A long thin pedicle was found, and was fixed by Spencer Wells's clamp in the lower angle of the wound. Considerable bleeding took place from the abdominal wall, where the adhesions had been separated, and, after many catgut sutures had been applied, it was found necessary to use the actual cautery to stop it. The divided omentum was ligatured, and fixed in the upper angle of the wound. The wound was covered with protective and carbolised gauze, with a large pad of salicyl-wadding over all. The patient did fairly well for the first two days, the pulse ranging up to 120, and temperature up to 102° Fahr. On the evening of the second day labour-pains commenced, and the os was found dilating. Abortion followed on the next day, the pulse afterwards being 134, temperature 101.5° Fahr. The dressings, which had become soaked through, were changed on the second day, and the secretion was found to be free from smell. For several days the patient suffered from nausea and rather severe symptoms, the pulse ranging from 120 to 134, and the temperature from 101.6° to 103.65° Fahr. The piece of omentum ligatured separated on June 29. On July 1 and 2 there were

severe cramp-like pains, and the pulse, which had become moderate, rose again to 140, the temperature to 104° Fahr. This afterwards subsided, but severe vomiting occurred on the 5th and 6th. The pedicle was divided with scissors below the clamp on the 6th. On the 10th the patient got up for half an hour, but on the 11th the temperature rose again to 104° Fahr., and on the 12th inflammatory swelling was felt all round the cervix, especially to the left side. On the 19th this had become softened, and pus appeared in the urine. From this time she rapidly improved, and left the hospital on July 31. The author attributes the cramp-like pains and vomiting to tension on the pedicle produced by involution of the uterus, and recommends that in future the pedicle should be left longer in similar cases. He argues against the opinion of Professor Martin, condemning ovariectomy during pregnancy, on the ground that, in this instance, the pregnant condition caused the cyst to increase rapidly.

[Dr. Baum does not enter into the reasons which led him to choose the performance of ovariectomy rather than the alternative of first eliminating the pregnancy by the induction of abortion. It would seem clear from the history, that the patient was exposed to considerably increased risk from the occurrence of abortion very soon after the operation.—*Rep.*] A. L. GALABIN, M.D.

DEPAUL ON CARCINOMA OF THE CERVIX UTERI IMPEDING DELIVERY.—In the *Archiv der Gynäkologie* for February 1876, Professor Depaul relates circumstantially an instance of cancer of the lower segment of the neck of the uterus, which presented a mechanical obstacle to the dilatation of the os uteri, and thus to the accomplishment of delivery.

The pregnancy appeared to have lasted over ten months. Attempts at delivery occurred about the end of the ninth month, and lasted several days, severe hæmorrhage also taking place. The foetal heart sounds were audible at first, but soon ceased. Physometra ensued; the membrane ruptured spontaneously, and the right arm and shoulder presented. A putrifying foetus was extracted by disarticulation of the arms and subsequent turning. Physometra persisted, the gas being of a most offensive odour. Acute septicæmia ensued, and the patient died at the end of a week.

At the necropsy, rupture of the uterus was found to have occurred, most foul-smelling gas escaping from the abdomen when this was opened. The cancerous condition was confined to the lower segment of the uterus, the fundus being free; the vagina was also healthy. The foetus was found to be hydrocephalic. ARTHUR W. EDIS, M.D.

TOWNSEND ON A CASE OF EXTRA-UTERINE PREGNANCY.—Dr. Lover J. Townsend, of Adairville, Kentucky, describes the following case in the *Nashville Journal of Medicine and Surgery* for March.

Mary M., aged thirty-two, mother of two children, two years previously to the time of seeing her, felt all the symptoms of natural pregnancy, suffering no uneasiness, mentally or physically, until after the expiration of ten months, when there was cessation of foetal movement, followed soon by some local pain and tenderness over the entire abdominal surface. Later still she experienced sharp cutting lancinating pains, which created such intense suffering that her attending physician resorted to opium;

which was given for ten months, when one day, suddenly, she was assailed with a most terrible diarrhoea, which continued for many days, and during which time she passed, at intervals, *per rectum*, all the bones of a well-developed foetal skeleton, save the frontal, occipital, and parietal, which could be distinctly felt through the flaccid abdominal parietes. Three inches below the umbilicus there existed several cloacæ, discharging, continually, a very fetid pus. Around these cloacæ an induration of surface extended over three inches in diameter, which was the guide in laying open the foetal sac, resulting in the removal of the bones above mentioned. As a result of peritoneal inflammation, the foetal sac was evidently glued to the abdominal parietes and large intestine. Ulceration and perforation of the intestinal wall soon followed, through which escaped the foetal bones.

RICHARDSON ON UTERUS SUBSEPTUS.—In the *Boston Medical and Surgical Journal* for March 30, 1876, Dr. W. L. Richardson says that there recently came under his observation in the out-patient department of the Massachusetts General Hospital a patient in whom the vagina was normal, while there were two distinct and perfect ora.

Mrs. —, twenty-five years old, began to menstruate when thirteen years of age. The catamenia, which were regular, except when interrupted by pregnancy, lasted about three days. The first few hours of each catamenial period were accompanied by very severe pain. The patient was married September 17, 1871. In November she became pregnant, and was confined on August 6, 1872. The child, a boy weighing seven and a half pounds, was born after a natural and comparatively easy labour of twenty-four hours. Nothing unusual was noticed during the course of labour, except the fact that the first few pains were accompanied by the loss of considerable blood. At the time of the delivery the attending physician stated that the patient had a double uterus. The request for a subsequent examination to verify this opinion was refused. The catamenia did not return between the birth of the first and that of the second child (a boy weighing nine pounds), on July 20, 1873, after a normal labour of eleven hours. The attending physician, as in the first case, noticed the peculiar condition of the uterus, and subsequently asked for an examination, which was, however, refused. The catamenia returned once between this confinement and the birth of her third child (a girl of seven and three-fourths pounds), on September 13, 1875, after a somewhat tedious labour of thirty-six hours. The same diagnosis of a double uterus was made, and a request for an examination was again refused.

At the time of her visit to the hospital the patient was nursing this last child, the catamenia not having as yet returned. Her general health was excellent. She complained of nothing except constipation, and the dysmenorrhœa already alluded to.

Examination showed the vagina to be normal. At its upper extremity two ora could be distinctly seen, the right one appearing like the os of a woman who had borne children, slightly patulous, round, and with an irregular slit on one side. There was a small ulceration at one point. The left os was like that of a virgin. Between the two ora was a band of normal tissue measuring about a third of an inch in width. The sound could be readily introduced into the right os, and by it the length of the uterus

was found to be two and a half inches. On bending the sound slightly, it could be easily introduced into the left os. Sounds introduced at the same time through each os were found to have passed into the same cavity. By sharply bending the end of the sound, it could very readily be passed into one os and out at the other. There was no appearance of an inflammatory action having existed at any previous time in the region of the uterus, nor could the patient give an account of the history of any previous uterine disease. A digital examination made *per rectum* and *per vaginam* detected nothing abnormal in the size or position of the uterus. A physician, examining the case at the ninth month of pregnancy, and recognising the presence of the two ora, might reasonably have concluded that he was dealing with a case of double uterus, inasmuch as, there being but one uterine cavity, the uterine tumour must have occupied the median line, which would not be the case with a pregnant uterus bicornis or unicornis. An examination made in the non-pregnant state alone could reveal the true condition of things. It is worth noticing that in this case, as in one reported by Corazza, the right os was situated in the median line, directly opposite the centre of the uterus, while the left one was slightly to one side. It was doubtless owing to this fact that the three deliveries took place through the right os. The record of these cases is interesting as showing that a double os does not necessarily indicate any abnormal condition of the uterine cavity above.

In a case, therefore, in which a physician's opinion was asked with reference to the probable duration and mode of termination of pregnancy in a patient whose uterus had two ora, and whose pregnant condition forbade the use of the sounds, the knowledge of the occurrence of such a case as that just cited would materially alter the prognosis which might otherwise be given under such circumstances. The existence of a double os might also readily occasion an error in judging of the stage to which labour had advanced, if the physician should examine hastily one undilated os, without recognising the existence of a second os, whose dilatation was more or less completed. This very error was made by the physician who attended the patient, whose case has just been reported, during her first confinement. Examining the left os, he gave an opinion that labour had not yet begun, and would not probably begin for some time; while the truth was the first stage was nearly completed, and the child was born soon after the examination was made.

RECENT PAPERS.

- On the Treatment of Internal Metritis. By Dr. T. Gallard. (*Annales de Gynécologie*, May, 1876.)
- On the Application of Mechanical Traction in Delivery in Reference to an Improved Obstetrical Apparatus. By Dr. Pros. (*Bulletin Général de Thérapeutique*, May 15.)
- Artificial Premature Labour on account of Hydramnios. By Dr. J. Ch. Huber. (*Erztliches Intelligenz-Blatt*, May 16.)
- New Researches on Puerperal Fever. By V. Krohn. (*Ueberschrift for Lager*, April 22.)
- On the Appearance of Fat-crystals in Vaginal Mucus. By Dr. Haussmann. (*Deutsche Medicinische Wochenschrift*, May 6.)

MADAME HAGELE has just bequeathed to the Assistance Publique of Paris ten millions of francs, to found an asylum for the aged infirm and incurable inmates.

DERMATOLOGY.

KÖBNER ON LEPROSY IN THE RIVIERA.—Köbner (*Archiv für Dermatologie und Syphilis*, 1876, Heft 1) notes observations he made on patients in a leper asylum at San Remo. The forms of the disease corresponded with those described by Danielssen and Boeck. Many facts concurred to bear out the known hereditary nature of the affection as also to show that it is not contagious. Köbner criticises adversely the view of Professor Erasmus Wilson, that the disease described by him as morphœa is allied to leprosy, directing his arguments more especially against the opinions maintained by Kaposi, in so far as he has followed the English dermatologist. The affection described as morphœa he believes to be of a different nature.

GEBER ON THE ANATOMY OF LUPUS ERYTHEMATODES.—Professor Geber (*Archiv für Dermatologie und Syphilis*, 1876, Heft 1) found that the earliest appearances observable were a condition of dilatation and stasis of the capillaries in the papillary layer of the skin, with evidences of a diseased condition of the vascular wall. An infiltration of lymphoid cells which begins immediately around the vessels, extends into the surrounding tissue, at first in rows and afterwards in masses. Whilst the cell-infiltration increases, the connective tissue bundles degenerate and disappear, until only a fine reticulum is left.

By an extension of the diseased condition from the vessels of the papillary layer to those surrounding the sebaceous glands, hair-follicles, and sweat-glands, an exudation of cells takes place around these structures, which is followed by alteration of their constituent and secreting cells. Division of the nuclei of the cells of the vascular wall and of the nuclei in the corium, with an appearance of granular protoplasm immediately round the nucleus, is interpreted by Geber as affording evidence of proliferation.

[Professor Geber has thus, as is remarked by himself, come to the same conclusion as the reporter, regarding one fundamental point in this disease. Geddings, Neumann and Kaposi have taught that the disease primarily involves the glands of the skin. Professor Geber and the reporter have found that the disease takes its origin in a morbid condition of the capillaries, and that the glands are affected secondarily.—*Rep.*]

WALLENBERG ON A CASE IN WHICH THE HAIR AND COLOUR OF THE SKIN WERE PERMANENTLY AFFECTED AFTER SCARLET FEVER.—Dr. Wallenberg describes the case in the *Archiv für Dermatologie und Syphilis*, 1876, Heft 1. The patient was a man twenty-one years old, and the eruption was characterised by intense redness. The desquamation was also unusual, the rete Malpighii being left bare by the falling off of epidermic flakes as large as the palm of the hand, which were separated from the subjacent skin by mucous exudation. This stage lasted four weeks, and was followed by the loss of the toe and finger-nails, the hair of the scalp, beard, eyebrows, eyelashes, the hair on the sexual organs, and the fine wool-hairs of the whole surface.

The hair, when it grew again, was white like an albino's, and the skin was milky white with a shade of red. The patient had been previously of a dark complexion with dark brown hair.

The skin remained highly vulnerable, an attack of universal eczema having subsequently followed exposure to the direct rays of the sun in a hot summer day, and on another occasion eczema following the application of mercurial ointment.

WIGGLESWORTH ON A CASE OF FIBROMA MOLUSCUM.—In the *Archives of Dermatology*, vol. ii., no. 3, Dr. Wigglesworth gives with a photograph an account of a case of fibroma molluscum, in which he counted 1,193 tumours. The patient, a man aged forty-five, observed the first tumour fourteen years before. The distribution of the tumours was most marked on the upper portions of the trunk, the genitals, palms, and soles being entirely free from them. Another case is reported of a farmer, aged thirty, the entire surface of whose body was studded with minute subcutaneous growths, but whose most conspicuous deformity was hypertrophy of the subcutaneous cellular tissue and integument of the anterior and external aspects of the left arm. The thickened skin hung in heavy cedematous and overlapping folds, movable upon the fascia beneath, increasing in size from above downwards like a drapery sleeve. The skin of the part had been long abnormal, but had attained its present size (pendulous to the extent of several inches) within a few years. Dr. Wigglesworth prefers the term 'cutis pendula' to dermatolysis for such cases. The pendulous skin was removed, and the wound cicatrised.

OSGOOD ON THE TREATMENT OF ELEPHANTIASIS.—Dr. Osgood (*New York Medical Record*) gives a tabulated account of fifty cases of operation for elephantiasis of the scrotum performed in Southern China, all of which recovered. The table contains thirty-three cases of Drs. Müller and Manson, and seven by the author. Dr. Osgood attributes much importance to the use of Fayer's tourniquet as a preventive of hæmorrhage during the operation.

G. THIN, M.D.

RECENT PAPERS.

Therapeutic Notes, collected at M. Hardy's Clinic at the Hospital Saint-Louis. By Dr. E. Ory. (*Le Progrès Médical*, May 20, 1876.)

Cases of Molluscosis Fibrosa. By R. Bergh. (*Hospitals-Tidende*, April 12, 19 and 26.)

REPORTS OF FOREIGN SOCIETIES.

FIFTH CONGRESS OF THE SOCIETY OF GERMAN SURGEONS.

The following abstract of the papers and discussions at the fifth annual meeting of the German Surgical Association in Berlin, under the presidency of Professor von Langenbeck, is taken from the *Deutsche Medicinische Wochenschrift* for April 29, May 6, 13, and 20.

April 19. *The Antiseptic Treatment of Wounds in Military Surgery*.—Professor Esmarch of Kiel, in commencing a paper on this subject, said that every one interested in military surgery, and who at the same time regarded, as he did, Lister's treatment of wounds as one of the most interesting surgical topics of our time, must have a lively sense of the need for making it useful in war. This question, however, must be answered during peace; and it would have to be determined by means of the experiences and

conclusions of civil surgery, how the method was to be carried out and advanced both in the official and the voluntary treatment of the wounded. As regards military hospitals, he said, the antiseptic treatment was to be employed in them in just the same way as in civil hospitals. The only consideration was, how to secure well skilled attendants, and the necessary supply of material. It was the special duty of the voluntary societies to solve these problems. Another question was, whether Lister's method was applicable on the field of battle. Here, according to Esmarch, strict antiseptic treatment was impossible. But, if its full effect was only to be expected when it was strictly carried out, ought it to be entirely abstained from on the battle-field? Esmarch was not of this opinion, but had endeavoured rather, by means of modifications, to make the principles of the method applicable in these circumstances. It had already been observed, before the introduction of Lister's method, that the most severe injuries in war, such as perforating gunshot wounds of the bones and joints, might heal without suppuration and without fever, and run a thoroughly aseptic course. Esmarch remembered especially three cases of this kind. The first was one of shattering by gunshot of the thigh-bone, occurring in 1848. The patient was very carefully treated by Ross, of Flensburg, and the wound healed under Fricke's dressing without suppuration. Later on, Esmarch more rarely saw such cases; suppuration and ichorous discharges were more frequently met with. These were generally ascribed to splinters of bone and foreign bodies, which were extracted according to rule. A second case occurred at Idstedt. There were two gunshot wounds, one of the upper arm, the other a simple gunshot fracture of the thigh-bone. The wound of the arm healed without suppuration in three weeks. At the end of four weeks, ichorous discharge occurred in the thigh-wound, with pyæmia, which led to death. At the necropsy, it was found that in the arm, which had again become movable in consequence of the pyæmic process, the splinters of bone were united with the callus. The third case was observed on September 15, 1870, in a wounded man who was brought to Berlin. There was a gunshot fracture of the upper arm, which was put up in a plaster-of-Paris bandage. The wound was not dressed during the journey. In the barrack hospital, the plaster-of-Paris bandage had to be removed, and no splinters could be found. A number of similar cases illustrating the aseptic course of the most severe injuries had been observed by others, especially in later years; this Esmarch believed to be due to the fact that the projectiles were smaller, and penetrated to the bone with more force than previously. How far the employment of carbolic acid—which was already adopted before Lister's time—was concerned, was undecided. But what was formerly the exception had become the rule since the adoption of Lister's treatment. Esmarch could entirely confirm Lister's results, and especially Volkmann's, who had treated more than forty complicated fractures by the antiseptic method without one death. Why did putrefaction especially occur in gunshot wounds? According to Lister, the causes were, not the bullet or splinters, but the excitants of putrefaction. These might be introduced into the wound with the ball, or more frequently on pieces of uniform, dirty clothes, etc., and set up septic processes. Bullets, passing rapidly through the bone, were less likely to do this.

Another source of mischief on the battle-field was produced artificially. The ordinary examination of recent wounds with the finger was hazardous. Formerly, this was the general rule; and so was the removal of bullets and splinters on the field of battle. From an antiseptic stand-point, Esmarch was opposed to this practice. The first principle of treatment was, *non nocere*; and an offence against this was committed by the practice to which he referred. Who could answer for the surgeon's fingers being clean? On the contrary, nothing could prevent them from being soiled with blood and other matters, through which septic processes might be excited. It should be remembered how frequently constitutional syphilis was present without being readily detected; and what would be the result of introducing the blood of a syphilitic patient into another man's wound! Those severe gunshot wounds, which ran an aseptic course before the introduction of Lister's method, were probably those which had not been explored with the finger. At Düppel, at the three dressing-stations on the field, all the cases were examined according to the rules of art. Was this in reality necessary? Was it for the purpose of deciding whether there were splinters, bullets, or foreign bodies in the wound? Whether amputation ought to be performed at once, or delayed till the patient's removal to an hospital? whether resection should be performed on the field? According to Esmarch, such examination was called for only when there were distinct indications for it. In such a case, however, it must be carried out with the greatest care. He saw much less danger in not ascertaining in the battle-field whether there were bullets, splinters, or foreign bodies in the wound, than in making an examination which might lead to the introduction of excitants of putrefaction on the finger-nerve in the explorations. The extraction of substances from the wound might be deferred to the patient's arrival in hospital, where it could be done under antiseptic precautions. As far as regarded examination on the battle-field, the principal question was, whether primary amputation was necessary? Since the introduction of Lister's method the indications for this had been entirely changed; and on the battle-field surgeons had in reality only to deal with the removal of limbs shattered by shells, etc. For such cases, material for antiseptic dressing ought to be at hand. The indication in such wounds was clear, without the necessity of any exploration. The first dressing should be omitted rather than done with dirty fingers, dirty water, etc. Everything used must be clean, and clean meant aseptic. Charpie was fortunately condemned; instead of it, cotton-wadding and jute were used; but these must be disinfected. In the earlier dressings, carbolic acid was employed; salicylic acid had now partly taken its place. Esmarch had contrived a small packet of the materials necessary for the first dressing, to be carried by each soldier. He had lately constructed, for the dressing-case of the assistants, a small parchment pocket containing a small ball of salicylised jute in salicylised gauze. This was to be used for wiping wounds, etc.—Herr Berns, of Freiburg, made a communication on the results of antiseptic treatment in his surgical clinic. He said that the number of cases treated was small for the purpose of comparison. Mistakes had also been made at first, and they had only gradually arrived at carrying out the treatment entirely according to Lister's method. The condition

of the clinic at Freiburg as regarded space could not be called bad, yet it was not without fault. The results of the treatment appeared to be inferior to those met with in Berlin, Leipzig, and Halle.—Dr. Burchardt, of Berlin, spoke of a modification of Lister's treatment. He recommended the following details. 1. The substitution for the ordinary spray of a stream of vapour developed from a two-per cent. solution of carbolic acid. The advantages were stated to be that the wound and surrounding parts were kept dry, and that there was no irritation of the wound by the antiseptic atmosphere. 2. The use of a spirituous solution of shellac, to which ten per cent. of carbolic acid was added. This was more easily prepared than Lister's lac-plaster. Pieces of linen or shirting impregnated with it adhered to the skin as freely as good adhesive plaster, and fitted themselves accurately to all inequalities. Over several layers of linen thus prepared, tinfoil was placed. The dressing was cheap. A disadvantage of it was, that on account of the impermeability of the material the evaporation from the skin was obstructed, and thus erythema was produced if the dressing remained applied for a long time. 3. Prevention of the removal of the antiseptic dressing, even while drainage was employed. In cases where drainage-tubes had been used, bacteria had often been found in the discharge from the wound. This could be avoided by connecting the tubes with disinfected lax India-rubber bags. In dressing the limbs, the enveloping of the diseased part in very thin India-rubber membrane was to be recommended: this was to be attached by carbolised solution of lac, and the drainage-tube brought out at the lowest part. In cases where the tube had to be brought out over an elevated border of the wound, Burchardt recommended the use of a combination of two bottles as a suction-apparatus, in the same way as for removing pleuritic exudations.

On Cotton-Dressing and Tannin-Dressing.—Herr Graf, of Elberfeld, said that he did not intend to speak of the modifications introduced into Lister's method by Thiersch, Bardeleben, and Volkmann, with a view to its simplification, but of the cotton-wool and tannin dressings. The earliest notice of the cotton-wool dressing, as far as he had been able to ascertain, was by Professor Burggraeve, whose method was warmly advocated by Ravoth. It consisted essentially on the immediate application of splints thickly padded with cotton to the injured limb, and aimed especially at securing immobility without taking notice of any wound that was present. It was therefore not applicable to the more extensive injuries of skin and destructions of tissue, and was not used in injuries of the hands and fingers, for example. The most important and promising modification of this was the cotton-dressing designed by Hermann Schulte, and described by him in the *Medicinische Centralzeitung* for 1857, and the *Deutsche Klinik* for 1860. While Burggraeve allowed his splints to remain applied as long as possible, Schulte insisted on the examination of the wound after a time. He laid on the injured limb a layer of cotton-wool from $1\frac{1}{2}$ to 2 inches thick; this also covered the wound and was secured by a bandage. After this, splints lined with cotton-wool were applied. The cotton-wool and blood became felted and dried, or, if there were bleeding of moderate duration, the dressing became saturated with blood; the cotton-wool around the limb, however, becoming dry and only that over the wound remaining moist. This dress-

ing was changed after four or six days. If there were neither inflammation nor suppuration, and there were a firm scab, it was left alone and only the surrounding cotton-wadding was removed. If suppuration were present, the part was dressed with cerate, and plaster of Paris was applied, etc. The principle of Schulte's plan was, then, the methodical application of so-called healing by scabbing, extended to large wounds. The disadvantage attending the plan, that the dressings not unfrequently became saturated within the first few days with blood, led Dr. Graf to use a combination of cotton-wool with tannin. The side of the cotton-wadding turned towards the wound was covered with a layer of tannin as thick as the back of a knife, and the dressings were applied as already described. If there were but little bleeding, the scab formed was perfectly dry, and remained adherent from four to fourteen days (Dr. Graf had not allowed it to remain longer). If the tannin were used to arrest rather considerable hæmorrhage, there was generally on the first day a moderate exudation of yellow fluid (serum containing tannin) into the surrounding dressings, which dried either with or without the addition of more wadding. If the dressings became moist after some days, incipient putrefaction might be arrested by the application of dry wadding or the affusion of carbolised oil; or, if there were much moisture, the dressing was renewed. The dressing must, of course, be loosened if inflammation, pain, or fever set in. But even here, if no indication for removal of the scab were detected on inspection of the edges of the wound, it could be allowed to remain and be covered in with fresh wadding. If it were necessary to remove the scab, warm water or, better, carbolised oil, should be used. The wound would be found of a dirty brown colour, covered with particles of tannin: if there had been considerable hæmorrhage, a brownish pulp was sometimes found between the scab and the surface of the wound. In normal cases, where the scab was detached at the end of the first or in the beginning of the second week, it was easily raised by a spatula; and under it was found a surface, either healed or granulating, and only occasionally covered with pus. Dr. Graf pointed out the advantage of this treatment as a preventive of inflammation. Fever and inflammation were generally entirely absent; and hence the tannin dressing found its application even in cases where it was not necessary in order to arrest bleeding. In a work published last year, Professor Fleck of Dresden had given tannin a high place among disinfectants. With regard to the hæmostatic action of tannin, Dr. Graf referred to a case of spurious aneurism after ligation of the common carotid artery, related by Dr. Hofmann in the *Berliner Klinische Wochenschrift* for 1871, in which recovery followed the plugging of the sac with a tannin-tampon; other similar cases, such as a dagger-wound in the abdomen penetrating the external iliac vein close above the femoral ring, treated successfully in a similar way, had come under his observation before he brought the tannin and cotton-wool dressing into use in cases of injury of the palmar arch. The success attending this had led to the employment of tannin dressing in cases of injury of the hands or fingers by machinery; since 1860, he had treated far more than a hundred such cases, attended with injury of the bones. In none of the cases, if brought early under treatment, was there local traumatic disorder. Fever and pain were either absent or very slight. Nothing was

removed but loose and perfectly useless pieces of bone, skin, and tendon; everything else was left, even though it seemed certain that necrosis must occur, and it often happened that preservation of parts occurred beyond what was believed to be possible. After accurate adjustment, and the ligature of such arteries as could be easily reached, but without probing or exploring the wound, and without minute cleansing of the skin, the tannin dressing was applied, and the hand and fingers carefully fixed to a padded splint, and left at rest until the dressing became saturated. Any corrective operations that were necessary, with the exception of removal of necrosed parts that could be done without trouble, generally took place in the third week or later. There were no cases of primary amputation or exarticulation of the hand. In complicated fractures of the limbs, Graf had at first used Schulte's cotton-wool dressing in almost all cases; more recently, he had also used the tannin dressing, unless, from the great extent of the wound, its total closure by a scab seemed impracticable. Lately, he had procured the tannin scab with good result in parts left bare by the plaster of Paris bandage. The tannin dressing was very suitable in cases of amputation of the breast with a clean surface-wound. In cases of operation for recurrent disease, Lister's plan could not be carried out, as the carbolic acid spray was too irritant to the unhealed cicatrix; after desisting from the attempt, erysipelas set in. Two subsequent cases of operation for recurrent disease were, on the other hand, found peculiarly suited for the tannin dressing, as at the same time the subjacent suppurating points could be dressed several times daily in the ordinary way. After the removal of vascular tumours, in which the different vessels could be only partially tied, and secondary hæmorrhage was imminent, the tannin dressing was especially applicable where compression could be applied. Herr Graf had lately removed from the head an angioma of the size of an ordinary fist; the largest afferent arteries were first isolated and tied, and, after extirpation, seven arteries were ligatured. Hæmorrhage, however, continued, but was at once arrested by the tannin dressing, which was allowed to remain twelve days; after its removal, a smooth granulating surface, without suppuration, was found remaining. A large venous angioma of the forearm and hand was removed under Esmarch's method; tannin dressing was applied, and changed after nine days; there were only two suppurating points. There was no reaction, and healing was complete in three weeks. The method was not applicable in cases of operation involving large sinuous wounds, or especially in the greater operations. The crevices of the wound could not be disinfected, the secretions, having no free outlet, became decomposed; and here the superiority of Lister's method and of the open treatment of wounds became apparent. Besides its antiseptic properties, the cotton-wool and tannin dressing possessed the undeniable advantages of being unirritant, hæmostatic, simple, and cheap. Herr Graf held that, until something better could be found, the tannin dressing deserved a place in military surgery. The simple closure of a recent gunshot wound or stab by cotton and tannin would obviate hæmorrhage and sepsis during the first days of transport; the dressing could be easily examined and removed, and could do no direct harm. Trendelenburg had insisted on the importance of a dry scab for the purpose of resisting

putrefaction, and this object was met by the tannin scab.

The Open Treatment of Wounds.—Herr Burow, of Königsberg, spoke of the success which had attended the use of the open treatment in his private clinic. In twenty-nine capital operations, including twelve amputations of the thigh and seven of the leg, there were only four deaths; viz. in two of the thigh and two of the leg cases. In two of the cases, there was gangrene; a third case was one of multiple sarcoma; and, in another, gangrene set in after an attempt at forcible extension in a case of aneurism of the popliteal artery, and it was found that the femoral vein was obliterated. He also brought forward further statistics to show that Lister's method was not, in comparison with other modes of treatment, attended with such brilliant results as its supporters alleged. He attributed the success of his treatment to the punctual carrying out of the open treatment, as recommended by his father.

In opening the discussion on the preceding communications, the President, Professor von Langenbeck, pointed out what were the principal subjects that demanded attention. It had to be determined whether the antiseptic method was applicable in military surgery, and what preparatory work was necessary for this in time of peace. Langenbeck believed that there was no doubt that no absolute rule could be laid down; neither Lister's method, nor the open treatment, nor that by scabbing, was applicable to all cases. What wounds must be treated antiseptically at once? *i.e.* on the field of battle itself, for in the military hospitals any treatment could be applied. Ought operations to be performed under the antiseptic spray? If there were any wounds which demanded antiseptic treatment, they were injuries of the head and penetrating wounds of the joints. Another question was, whether in such injuries the parts should be at once rendered immovable, and whether immobility can be carried out along with the employment of the antiseptic method.—Herr Busch of Bonn said that for a long time he had followed Burow's plan of the open treatment of wounds, and had gradually gone over to Lister's method. He alleged, however, that, if a simple comparison of numbers were made, the advantages of the antiseptic method might not appear so evident. In the meantime, much depended on the mode of healing. While the antiseptic method was one of the fairest weapons in the hands of the surgeon, on the other hand it was a two-edged sword, to be used only by him who was sufficiently familiar with it. In many operations, such as those on the genital organs, he had not gone so far as Volkmann, but hoped to do so. In military surgery, he held that the antiseptic method was as yet not thoroughly applicable on the field. When new military weapons were discovered and approved, soldiers were exercised in their use for many years before they were employed in war. The number of surgeons sufficiently exercised in the antiseptic method was not large. Military surgeons must become perfectly acquainted with it in the hospitals; and the German military medical organisation did not favour this. So long, also, as the wounded were not treated by the surgeon who first applied their dressings, there was no security for the carrying out of Lister's plan. He denied that it occupied too much time. Much time was saved by Esmarch's plan of bloodless operation; and Dr. Busch could operate as rapidly under the spray as without it.—Herr

Hüter, of Greifswald, thought that the application of Lister's method in the battle-field was difficult. He made remarks on the necessity of drainage, and recommended the use of antiseptic irrigation.—Herr Trendelenburg, of Rostock, pointed out numerous objections to Burchard's plan, and showed an apparatus for the employment of Lister's method.—Herr Heineke, of Erlangen, insisted on the difficulty of carrying out Lister's plan in military surgery in cases of gunshot fractures which demanded strict immobilisation. The use of the interrupted splints recommended by Esmarch was of service in many cases, but was not always admissible.—Herr Volkmann, of Halle, said that strict immobilisation was not necessary under the antiseptic dressing. If the first dressing were carefully applied, it was sufficient to place all complicated fractures on a tin splint with a foot-board; neither suppuration nor swelling took place. Even in cases of resection of the knee-joint, he was no longer so anxious as before. Of twelve cases of this operation, not one died of traumatic disease; in forty-nine complicated fractures, he had not a single fatal case; and besides these, he had had thirty-three equally successful cases of osteotomy. Hence he no longer attached so much importance to permanent immobilisation. The careful application of the dressing certainly occupied much time, when one desired to be certain of the disinfection of the wound. His results in the treatment of gunshot-wounds were perfectly successful; an aseptic course was secured.—Herr Koenig, of Göttingen, said that in cases of complicated fracture the length of time that elapsed before they came under treatment was an important matter. In the course of half-a-day, sepsis might occur.—Herr Hüter had met with a case of injury in which gangrenous septicaemia was present at the end of twenty-four hours.—Herr Volkmann again insisted on the necessity of using carbolic acid and drainage. It was necessary to carry out the details of the antiseptic method most accurately and minutely. If anything were overlooked, an aseptic course could not be secured. Immobility was very well obtained by tin splints. In cases of resection of the hip-joint, complete immobility had been long ago procured by their use.—Herr Hüter said that, when immobilisation and antiseptic treatment came into collision, he renounced the former. Consolidation might be thus impeded, but life was not endangered. In many cases, such as resection of the elbow-joint, both would be used.

April 20. *On Secondary Hæmorrhage after the Employment of the Bloodless Method.*—Herr Esmarch, of Kiel, gave a description of the application of his method in an amputation. After the limb was enveloped in the elastic bandage, the operation was proceeded with if the limb were white, and did not again become red. Esmarch preferred the circular incision, as the arteries were cut transversely, while by the flap operation an oval opening was made in the vessels, and it might easily occur that the whole lumen of the vessel was not included in the ligature. The operation being completed, everything which showed a lumen, including veins as well as arteries, was tied. The compressing ring should be loosened suddenly, not slowly. The parts remained empty of blood for a time, but soon the surface of the wound became filled like a sponge. Irrigation with ice was at once employed. Esmarch recommended that there should always be a number of artery-forceps at hand, so that no time might be lost in the ligature of

the vessels.—Herr von Langenbeck remarked that the discovery of a means of preventing secondary capillary hæmorrhage would be as important as that of artificial bloodlessness. He had never met with secondary hæmorrhage from vessels ligatured with catgut. If it were possible to prevent capillary bleeding, every amputation wound might be brought to heal by the first intention. The choice of the method of operations depended essentially on the kind of treatment; it must be different when antiseptic dressing was to be applied from that practised when the open treatment was to be followed.—Herr Busch, of Bonn, said that everyone who followed Esmarch's plan must pay for experience. The long-continued constriction might lead to paralysis of the vessels. In a fatal case, the *post mortem* examination showed anæmia of the brain.—Herr Volkmann, of Halle, spoke of the importance of the antiseptic method in regard to secondary hæmorrhage. Capillary hæmorrhage immediately after the operation was to be arrested by the application of antiseptic compression.

The Application of Catgut Sutures to the Uterus after Cæsarean Section.—Dr. A. Martin, of Berlin, made a communication on this subject. Since Veit in 1873 recommended catgut suture of the uterus in cases of Cæsarean section, it had been used in five cases in the obstetric clinic in Berlin. Strong catgut threads were passed through the entire thickness of the uterine wall, and tied in triple knots; in all the cases the bleeding was arrested, and the uterus at once contracted firmly. One patient alone recovered. Two others died of peritonitis. One of these, operated on in consequence of narrow pelvis, died on the third day; the uterine wound was united and the sutures were entire. The other patient had suffered from carcinoma of the cervix and extensive infiltration of the pelvic viscera; she died on the sixth day; the uterine wound was healed for the width of a centimètre externally, but gaped widely internally. The fourth patient showed symptoms of internal hæmorrhage thirty hours after the operation, which was performed on account of narrow pelvis and cicatricial narrowing of the cervical canal and vagina. The effusion into the abdominal cavity was removed; but it again occurred in fourteen hours, and led to death. The catgut threads in the middle of the wound had become loosened, allowing the edges to gape widely. In the fifth case, internal hæmorrhage set in fifteen hours after the operation, from the effect of which the patient died in a few hours. The Cæsarean section was performed on account of extensive narrowing of the cervical canal. At the necropsy, all the knots of the catgut threads were found loosened. Having regard to these cases, and to the most recent experience in London, Prague, and Breslau, Dr. Martin considered that the use of catgut for suture of the uterus ought to be rejected. He recommended the use of silk sutures, which were to be left within the abdomen.—Herr von Langenbeck believed that catgut sutures were not applicable in operations for vesico-vaginal fistula, and that in general they would only be used when the operation and treatment were carried out on the antiseptic plan.—Herr Fischer, of Breslau, had used catgut successfully in the treatment of perforating wounds of the abdomen. It was very durable for suture of the intestine.—Herr Winkel, of Dresden, was very well satisfied with the catgut suture in the operation for vesico-vaginal fistula.—Herr Busch, of Bonn, had used catgut as an uterine suture in two cases, and was much pleased with the result.

The Causes of Death in Surgical Cases.—Herr Heineke, of Erlangen, directed attention to the contradiction among surgeons as to the cases of death occurring in their practice. To estimate the amount of this difference, he considered a grouping of the causes of death necessary. What events caused death in surgical patients? Internal diseases must be excluded; and deaths might also occur from unfortunate accidents, such as chloroform-narcosis. Of much importance, however, was the class of causes of death having a causal connection with surgical treatment; to these belonged all the diseased processes which the surgeon could avoid. In the surgical clinic at Erlangen, from May 1867 to January 1875, 3,081 cases were treated; of these 213, or 6.9 per cent. died, the mortality varying in the different years. Of the 213 deaths, six were due to internal diseases, and eight to accident.

On Regeneration of Bone, with Special Reference to the Formation of Callus.—Herr Maas, of Breslau, read extracts from a long paper on this subject. With regard to development, he remarked that in the bones the non-vascular cartilaginous layer already showed in general the form of the grown bone. The development of the spinal osseous tissue coincided with the formation of vessels. The first action of the vessels on the cartilage was calcification; the vessels penetrating into the cartilage opened up its cavities. Two vascular systems were to be distinguished, the persistent, to which was due the growth in thickness of the bone, and the endochondral, which converted the cartilage-cells into bone-substance and bone-corpuscles. As the lateral walls of the medullary cavity, after the original cartilage had been changed into bone, and partly absorbed, partly combined with the periosteal osseous layer, there was no further formation of osseous substance, while at the end of the medullary cavity the cells for the growth in length were furnished by the epiphysal cartilages. Absorption of the osseous tissue took place in the periosteal vascular system at the sides of the medullary cavity, in the endochondral system, at the external absorption-surfaces described by Kölliker, at the point where the arteries passed into veins. As regarded regeneration, Herr Maas showed that the periosteum could not be regenerated from the osseous tissue nor from the surrounding connective tissue, but only from itself. The marrow, which in general was capable of contributing to the formation as well as the absorption of bone, might, after its destruction in the medullary cavity, be simply reproduced, or the medullary cavity was found filled with bone. The necrosis of bone frequently observed in these circumstances depended either on a simultaneous extensive destruction of the periosteum or on septic processes, ichorous thromboses being formed in the vessels of the bone. The epiphysal cartilages were not reproduced when destroyed or excised. Callus was exclusively a product of the periosteum. It was developed from the wandering cells, which passed in great quantity into the deep layer of the periosteum. It was at first purely cartilaginous, and was changed into bone-substance by the vessels entering it. This took place most rapidly in the medullary cavity; yet, in the marrowless bones of birds, and in bones from which the marrow had been removed, the whole callus could be found in a state of cartilage at a certain time after fracture. The superfluous callus was removed partly through the medullary cavity, partly through the external ab-

sorption-surfaces. Herr Maas had used cinnabar for tracing the connection between the cells. His results were the following. Particles of cinnabar were first found in the wandering cells; then in the cartilage-cells and in the bone-corpuscles; and, if the research were carried far enough, a large quantity was found in the cells of the marrow.

Experimental Researches on Ostitis and Necrosis.—Professor F. Busch described some experiments which he had made in the following manner. He first bored a hole in the upper-end of a long bone, generally the tibia, and destroyed the marrow by means of a wire. He then bored another hole at the lower end; and, having passed a fine platinum or iron wire through the two holes, connected it with a galvanic battery and cauterised the medullary cavity. The results, according to the intensity of the cauterisation, were classed in four degrees. In the first degree there was not necrosis, but only acute inflammation. In the second degree, there was central necrosis. In the third degree, the heat destroyed the entire thickness of the cortical substance at the part where it was applied (penetrating necrosis); if the whole circumference of the bone were cauterised, total necrosis was produced. A fourth degree of heat destroyed the whole tissue of the bone. This was followed by putrefaction, which destroyed the animals within the first week, without any appearance of reaction in the bone.

Experimental Researches with Reference to Ovariectomy.—Herr G. Wegner, of Berlin, made a communication on this subject, of which the following is an abstract. The causes of death after ovariectomy are generally said to be twofold: shock immediately or a short time (twenty-four hours at most) after the operation, and peritonitis at any time from twenty-four hours to fourteen days. It is incorrect to explain death in the first series of cases by shock. If shock mean reflex paralysis of the heart through violent and sudden irritation of the peripheral sensory nerves, it cannot be said to occur in ovariectomy, as irritation of this kind does not attend surgical operations—to say nothing of the deadening of sensation by chloroform-narcosis. Nor can we regard as more correct the explanation given by some authors, that death is due to cerebral anæmia, occurring from the overfilling of the abdominal vessels. On *post mortem* examination, anæmia sufficient to account for the sudden interruption of the functions of the brain is not found, and on the other hand intense abdominal hyperæmia may be produced in animals without producing any essentially ill results. The cause of death in these cases is to be sought in the cooling of the body, which is unavoidable in operations of some duration where the abdomen is opened. If the abdomen of an animal (rabbit, dog, or cat) be opened by a large incision, and the intestines be exposed to a temperature of 59° to 64.5° Fahr., the temperature falls in the course of eight hours as low as 73.4° Fahr. A few hours later the animals die, the temperature having fallen to 64.5° or 66° Fahr. The cooling mostly takes place during the first two hours, within which time the animal may lose 12.5° Fahr. of heat. At this time the respiration and heart's action are slow and weak, the animal functions are greatly interfered with, the intestines are completely paralysed, and the serous membrane intensely hyperæmic. The hyperæmia is partly arterial and partly venous, in consequence of the failure of the peristaltic action, which is an important agent in propelling the blood along the veins. There is no

exudation from the serous membrane, either now or later. The cooling of the whole body is due in a small measure to the continued rest of the animal, but mostly to the direct loss of warmth through the opening of the peritoneal cavity. The loss of heat is also favoured by (1) the great superficial extent of the abdominal cavity (which in a woman is calculated approximatively to be equal to the whole surface of the body); 2. By the absence of a bad conductor of heat on the surface; 3. By the loss of latent heat through the continued exhalation from the moist surface of the peritoneum. This loss of heat, highly injurious to animals, may be supposed by analogy to be equally so in a case of ovariectomy. In all probability, the amount of cooling in the human subject is still greater, in consequence of the use of chloroform. Wegner found in a healthy young man, to whom chloroform was given for two hours, that the temperature fell from 99.5° to 95° Fahr. Further, if the ovariectomy be performed under Lister's antiseptic spray, there is another source of reduction of temperature. A body having a temperature of 59° Fahr., was found to be cooled in two minutes under the spray to 41° Fahr., and one of 82.4° to 66° Fahr. This is a matter of great importance, and indicates the necessity of avoiding all sources of considerable cooling, such as the spray and prolonged narcosis; and at the same time an endeavour must be made to restrain the unavoidable loss of heat by the use of bad conductors. Herr Wegner has been able to prevent the loss of heat in animals for eight hours, by the use of a warming apparatus; and he recommended the use of one in ovariectomy. No physiological explanation has as yet been given of the fact that in some cases there is no peritonitis after ovariectomy, while in others it is often the cause of failure. There must be some fundamental differences in the quality of the cases to account for the difference of results. To explain them, the physiological relations of the peritoneum, and especially its traumatic conditions, must be considered. The great point to be considered is the great extent of surface of the abdominal cavity; the next, the transudative power of the peritoneum. A third point is the absorbent power of the peritoneum. The peritoneum of a rabbit can take up in one hour from 2 to 8 per cent. of the weight of the animal of a watery solution (salt, artificial serum, etc.). In consequence of this abundant and rapid absorption, the action of plastic injected substances (such as morphia, chloral hydrate, and cyanide of potassium) is almost immediate. Distilled water, serum, solution of common salt, solutions of neutral salts, infusion of muscle, urine, and even bile, are absorbed without presenting any ill effect on the serous membrane, so far as its structure is concerned. Substances different in quality, and acting injuriously on the body, such as large quantities of common salt or iodide of potassium, naturally produce their toxic action very quickly. Air, either ordinary or after filtration through cotton-wool, may be introduced in considerable quantities for months into the abdomen of animals without producing harm. If the air be injected in quantity sufficient to produce much distension, the changes produced—thickening of the peritoneum, formation of indurations on the liver, spleen, and stomach, dilatation of the lymphatics, especially of the mesorectum—are to be referred to the enormous distension, not to the air. Oily fluids are absorbed, partly directly, partly in emulsion, partly encapsuled in small drops. Fluid containing

particles (such as Indian ink, cinnabar, carbon, starch, milk, blood, and pus) are absorbed when the particles do not exceed the colourless blood-corpuscles in size; larger particles are encapsuled. No exception is shown by fluids containing micrococci and bacteria. As regards the mechanism of absorption, there are essentially three processes. In materials different in quality, there is diosmose. The removal of masses of fluid is effected by filtration, and—as the most active factor—direct transmission through the wide stomata of the peritoneum of the diaphragm (and of the mesorectum) into the immediately subjacent rich lymphatic network. The thoracic and abdominal pressure also acts. The increase of the abdominal pressure by expiration forces in the fluid into the diaphragm; the reduced thoracic pressure sends it on and carries it through the thoracic duct into the venous circulation. Of special importance to surgeons is the behaviour of fluids capable of putrefaction when left in contact with air, according as whether large quantities of air be enclosed with them or not. Their decomposition appears to be more rapid and energetic in the abdominal cavity than in any other part of the body, and the development of low organisms is most colossal. The development of these is greatly favoured—as has been shown by other experiments made outside the peritoneum—by the constant motion to which they are subjected in the peritoneum by the peristaltic action. If abundant absorption take place, the fluid is carried with the organisms which it contains into the circulation; and death results from septicæmia, in both the chemical and the corpuscular sense of the word. The only exception to the putrefying fluids is blood, which, taken from a living animal, and injected (deprived of fibrin) with any amount of air into the abdomen, does not undergo decomposition. As regards plasticity, the peritoneum has the most marked tendency to healing by the first intention. The serous membrane produces new cells, which, finding abundant pabulum in the serous exudation, do not die (*i.e.* become changed into pus-cells) but continue alive, soon becoming changed into a tissue containing vessels. As regards this, wounds of the peritoneum must *à priori* be regarded as favourable. Small quantities of injurious materials are absorbed, before decomposition takes place; substances incapable of absorption are encapsuled, and the wound tends to close in the shortest time. There is not the danger of immoderate tension which is so much to be feared in wounds of the connective tissue, muscles, bones, and joints; the diaphragm acts as a moderator of the pressure. In fact, in wounds of the peritoneum, the ordinary results of excessive tension—necrosis, gangrene, venous thrombosis, phlebitis, and embolism—are entirely absent. It is quite different, and a peritoneal wound becomes more dangerous than one in any other part of the body, if decomposed fluids be present in or be introduced into the abdominal cavity. Very large quantities of injurious materials may under these circumstances in a very short time enter the general circulation, with most serious danger to life. In cases of bursting of abscess into the peritoneum, or of perforating wounds of the intestine, it is not the peritonitis but the septicæmia which is most dangerous to life. After these remarks, ovariectomy, the extirpation of a healthy ovary from an healthy animal, must appear *à priori* to be relatively without danger. This is confirmed by the operations ordinarily per-

formed on pigs, fowls, pigeons, etc., as well as by experiments on dogs. That a certain number of extirpations of ovarian tumours, in which the abdominal wound is perfectly closed, heal favourably by the first intention without symptoms of peritonitis, is readily understood; but it must not be concluded therefore that the course of all cases of ovariectomy is equally favourable. It can, rather, be shown on physiological grounds, that a certain category of cases must run another course. While cases of the first kind are those in which small tumours have existed a comparatively short time, especially in young individuals whose abdomens have not yet suffered from frequent pregnancies, the latter class is distinguished by the great circumference of the swelling, by its long existence, by the defective condition of the abdominal walls, resulting from age, and perhaps from repeated pregnancies. Hence adhesions occur; and, under these conditions, the abdominal wall becomes distended, and loses more or less of its elasticity. If, now, the tumours be extirpated, the abdominal pressure is rapidly reduced, perhaps rendered *nil*, and hence a total change is induced in the relations of the circulation, exudation, and absorption. These occurrences may be demonstrated in an animal in which air has for some time been blown under high pressure into the abdomen, so as to distend the walls and reduce their elasticity. If the abdomen be punctured, and the air allowed to escape completely, the abdominal wall collapses in loose folds. If the abdomen be opened after six or eight hours, the following appearances are observed in it: free ascitic effusion, hyperæmia of all the viscera, extensive lymphatic stasis of the whole of the small intestine, with tense filling of the large veins and lymphatic trunks. It is plain that in consequence of the sudden renewal of pressure, arterial hyperæmia and exudation have set in, to which the lymphatic and venous stasis, brought about by the defective suction-power of the thorax, may have contributed not a little. The conditions in a patient on whom ovariectomy has been performed are manifestly analogous in one class of cases. As a result of the sudden change in the abdominal tension, an acute transudation must take place. Fluid must also trickle continuously from any adhesions that are present, since the pathological vessels neither close of themselves, nor can they be closed passively, in consequence of the defective abdominal pressure. The paralysed intestine, with its venous stasis, must contribute to the abundance of the transudation, while absorption is interfered with just as in the experiment. The weakening of respiration constantly observed after chloroform-narcosis, the generally depressing influence of the operation on a sick person, may also have an influence. Hence, in a certain number of hours after ovariectomy, there must be a sero-sanguinolent effusion in the abdominal cavity, and, if air be admitted, this must undergo decomposition. In proportion as the local and general conditions again approach the normal, absorption takes place, and more or less distinct septicæmia must be the necessary result. As regards the further course of the case, three things may occur. 1. The quantity of effused and decomposed fluid remains moderate, so that the resisting power of the patient overcomes the degree of septicæmia. 2. The quantity is so considerable that, especially if it pass rapidly into the circulation, death is produced by acute septicæmia with well marked toxic sym-

ptoms. In such a case, care must be taken not to omit an examination of the heart and kidneys for pathological changes, or of the blood for the presence of septic organisms. 3. If absorption of the decomposed materials take place slowly, the patient presents the symptoms of chronic septicæmia; at the same time, if the irritant putrid fluids stagnate in the peritoneum, exudative peritonitis sets in, the products of which in their turn decompose and add to the disastrous effects of the first effusion. Sooner or later, under these circumstances, the result is fatal unless the patient's constitution be of extraordinary strength. In all these cases the septicæmia is the dominant factor, and the peritonitis is of secondary importance. The therapeutic indications in the different cases are hence quite different. In a certain number of so-called 'favourable cases' the abdominal wound may be perfectly closed at once, in the hope that it will heal along its whole extent by the first intention. In the second category of cases, the indications are either to precede the exudation, to prevent its decomposition, or to guide the decomposed matters outwards as soon and as completely as possible. 1. Transudation may be hindered by the restoration of abdominal pressure by means of the application of bandages after the operation; or perhaps semilunar pieces may be cut out of the abdominal wall and the edges brought together with sutures. 2. Decomposition may be prevented (a) by Lister's spray. On theoretical grounds, it is *a priori* very improbable that the agents of putrefaction in the air which almost resist a boiling heat will be destroyed by a two or two-and-a-half per cent. solution of carbolic acid. Wegner has observed in a number of cases that after the use of Lister's spray there are always organisms in the exudation, though in smaller quantity than in other circumstances. (b) Decomposition would be prevented much more completely if, in cases of ovariectomy, the air that has access to the wound could be filtered through cotton-wool. In the after treatment, the safest plan appears to be to remove the secretions early and completely, by means of Marion Sims's plan of drainage through the lowest part of Douglas's pouch.

Herr Olshausen, of Halle, fully recognised the importance of Herr Wegner's observations. Some of them were already confirmed by observation, such as the collapse as the result of reduced temperature, generally attributed to shock. The frequency of this was generally in direct relation to the duration of the operation; and thus were explained the directions of the English operators with respect to raising the temperature of the room, clothing the body with wool, etc. Wegner's view that the performance of the operation under spray increased the number of deaths by shock, appeared to be confirmed by experience. Nussbaum had lost five cases out of twenty-one; none by septicæmia, but most of them by shock. Drainage through Douglas's pouch gave good results. The question now was, whether preference was to be given to it or to strict antiseptic precautions. On this, experience must decide. Marion Sims himself had given up the plan of drainage which he had devised; and Spencer Wells was opposed both to the antiseptic method and to drainage in ovariectomy. The object of drainage was the removal from the abdominal cavity of matters capable of decomposition, not of peritonic exudation. Peritonitis did not kill of itself, but through the absorption of septic matter.—Herr Tillmanns called attention to the danger of abdominal

plethora, and referred to Ludwig's experiments, which showed that ligatures of the portal vein caused death within an hour.—Herr Ziemssen, of Aix-la-Chapelle, observed that Dr. Thomas Keith had had excellent results. He operated very slowly, and did not close the wound until all bleeding had been arrested.

Granular Growths and Tumours of the Larynx.—Herr Wilhelm Koch, of Berlin, related a case which had occurred in his practice. On November 5, 1875, in company with Dr. Schmiedeberg, he performed tracheotomy on a boy aged three-and-a-half, suffering from severe dyspnoea, the consequence of diphtheria. In the course of three days, diphtheritis of the wound appeared, and proceeded so rapidly, that within forty-eight hours there was a dirty ichorous sore, reaching from the thyroid cartilage to the incisura jugularis of the sternum; at its base the trachea could be seen, while the lateral parts of the neck were red and much swollen. The energetic application of the actual cautery arrested the destructive process so rapidly that the necrosed parts were thrown off some days later, and the parts began to be covered with healthy granulations. Contrary to expectation, there was scarcely any loss of substance from the opening in the trachea. The cannula was removed without difficulty on the ninth day; and the case went on well, although there was complete paralysis of the muscles of the œsophagus and larynx, on account of which it was necessary to use the œsophageal sound for a fortnight. In the beginning of December the wound had cicatrised, the paralysis, as well as albuminuria, had disappeared, and there was only slight pains of the lower limbs. One day, while faradisation was being applied, the child became dark red in the face, and made some whistling inspirations. This paroxysm soon passed away, but again occurred on the next day. On December 14, Dr. Koch found the child with strongly marked difficulty of breathing, the only cause of which that could be assumed was an obstruction in the air-tube, probably at the site of the incision, the result of granular growth in the cicatrix. Tracheotomy was easily performed without anaesthesia. There were found four or five pale flaccid pedunculated granulations, each as large as a pea, which had evidently been developed when cicatrization began; taken together, they were about as large as a raspberry. After they had been removed by a Daviel's scoop, respiration went on normally even when the opening was closed with the finger. The wound was therefore allowed to heal at once, without using a cannula. The child appeared to be cured; but as early as January 2, the attacks returned, whenever he cried, the breathing became difficult and prolonged, and at the middle of the month there was constant dyspnoea. On February 10, tracheotomy was performed for the third time. The operation was very difficult; the trachea was, however, opened, and a cannula introduced. Next day Dr. Koch proceeded to examine the air-tube with a sound, when a violent attack of cough brought into sight a dark red bladder about as large as a cherry, which burst on being seized with forceps. It was found to have a dark red peduncle attached to the mucous lining of the cricoid cartilage, and the same peduncle also supported several granulations, three of which, as large as cherry-stones, were removed. It was found that the child could breathe even when the cannula was removed, the remaining peduncle being probably so much contracted as not to be capable of producing obstruction.

In commenting on this case, Dr. Koch remarked that the granulations in the immediate neighbourhood of a tracheal wound appeared to grow exuberantly, and to penetrate into the air-tube. The inspiratory effort must act energetically on the vessels of the granulations, and lead to their distension with blood and oedematous effusion, as was shown by the bladder filled with serum found during the second operation. Granular growths might also occur at other parts besides the opening in the trachea or larynx, in cases of diphtheria. Dr. Koch had seen a polypus with a long peduncle at the level of the cricoid cartilage, where it could not have been due either to the operation or to the cannula. A third cause of granulation-growth was the ulceration of the trachea produced by the pressure of the cannula. Anatomically different from these formations were the cases in which the diphtheritic ulcerative process undermined the trachea, leading to the formation of tongue-shaped lobes, which obstructed the calibre of the larynx, and were capable of increase in size. The transition to cicatricial narrowing was attended by the swelling arising from phlegmonous infiltration of the mucous membrane of the trachea, which, especially in young children, might end in true stricture. In regard to diagnosis, it must be remembered that there might be a combination of the morbid changes above described. As regarded treatment, Dr. Koch recommended that the cannula should be left in for several weeks after tracheotomy for diphtheria, and that the wound should be cauterised several times.

Electric Apparatus.—Herr Mosengeil, of Bonn, showed his electrodes for the purpose of closing, opening, and changing the current during application.

Treatment of Ventral Hernia.—Herr Hadlich, of Heidelberg, described an operation devised by Herr Simon for the operative treatment of ventral hernia at the linea alba. The operation appeared to have been perfectly successful, especially in preventing a recurrence of the affection in subsequent pregnancy.

Frost-Bite of the Nose.—Herr Riedlinger, of Würzburg, related a case of redness of the nose following frost-bite treated by the subcutaneous injection of ergotin (one part in six) over the nasal bone. Symptoms of cerebral anaemia appeared after the injection, but soon disappeared. The condition of the nose was improved.

Demonstrations of various interesting cases were given on two of the days in the operative theatre of the hospital.

The session was closed with some remarks by the President.

ACADEMY OF MEDICINE IN PARIS.

April 25. *Gastrotomy.*—M. Léon Labbé read a note relating to a case of gastrotomy performed in order to extract a foreign body (a fork) from the stomach. It related to the famous fork swallowed by a young shopman. From March 4, 1874, the date of the accident, the patient went through different changes; during some months he resumed his occupations, but his sufferings became so acute, especially after meals, that it became necessary to contemplate extraction. On April 9 the patient was chloroformed, and the operation commenced. M. Labbé had decided on the caustic plan, but, adhesions not coming on according to his wishes, he

made an incision into the abdomen, then into the wall of the stomach, after having previously raised and freed the edges. The index finger of the left hand, introduced into the open wound, allowed him to feel the fork. With the aid of a sound he turned it gently round, and finally drew it out. The abdomen was then covered with a thick layer of collodion to contract the tissues, and iced champagne was administered to the patient. The envelope of collodion hastened the restoration of the tissues to their place. The respiratory rhythm had become greatly modified under the influence of this compression. The fistula became smaller, and it was hoped that it would disappear in a few weeks. The patient was as well as possible, and perfectly able to take solid food.

Etiology of Stone.—M. Debout d'Estrées read a memoir on the causes of stone, studied at Contrexéville. Calculi or gravel might (1) pass from the kidney into the bladder, inducing nephritic colics; (2) remain in the kidney and become developed there; (3) remain in the ureter and bring on serious complications; (4) become the nucleus of larger or smaller calculi in the bladder; finally, in exceptional cases, break up in the bladder and come out spontaneously.

Lead-Colic and Colic of Tropical Countries.—M. Le Roy de Méricourt resumed the question of dry colic in hot countries. The list of symptoms is identical with that of lead-colic. The cases of so-called dry colic have multiplied in a remarkable manner since the extension of steam navigation with engines loaded with lead. In his opinion 'there is no such thing as endemic colic of tropical countries.'—M. Briquet would like to see the term 'lead-colic' replaced by that of 'abdominal myosalgia,' since the pain has its seat in the preabdominal muscles, and not in the intestine.—M. Ruzé de Lavison was of opinion that M. Le Roy de Méricourt was too exclusive. There is a true dry colic, observed not on board steam-vessels, but on the coast and in the interior of tropical countries, which cannot be erased from the nosological list.

May 16. *Dyspepsia.*—M. Leven read a memoir on dyspepsia. He enumerated the numerous varieties allowed by Sauvages, Cullen, Pinel, etc. Then came Broussais, who upset everything, and put gastritis in the place, not only of dyspepsia, but of the majority of diseases. Barras was one of the first who protested against this, and invented gastralgia, as one of those forms of dyspepsia in which the element of pain predominates. What is common dyspepsia? Is it independent of phlegmasia of the stomach, and is it but a functional lesion? M. Leven sought the solution of these questions from experimental pathology. For the dog, as well as for man, there are foods easy and difficult of digestion. In the case of the dog, meat is digestible, fat is indigestible; a meal of fat alone makes the animal dull and uneasy. If the stomach be examined two hours after such a meal, traces of a more or less acute phlegmasia are found, the vessels, nerves, glands, muscular coat, all the elements of the organ are changed. This transitory lesion will continue to increase if the defective alimentation be persevered with. In the human subject, the assemblage of symptoms called dyspepsia have the greatest analogy with those shown by the dog. If the analogy of structure existing between the stomach of a man and that of a dog be taken into consideration, it may fairly be deduced that indigestible food has the same irritant effect in man, and that the anatomical lesion

is the same, transient in the first instance, and disappearing if the alimentary regimen be good, and on the contrary, developing itself, if the alimentary conditions be unchanged. We cannot, therefore, with Beau, consider dyspepsia as a simple functional lesion, nor with Barras, as a gastralgia or a simple neurosis. M. Leven considered that simple ulcer of the stomach is always connected with a previous dyspeptic condition; he does not admit Virchow's theory of its formation by thrombosis or embolism. He had tried, in conjunction with M. Bochefontaine, to produce these ulcerations experimentally by injecting lycopodium powder into the arteries of the stomach, but had never succeeded in doing so. The numerous arterial anastomoses of the gastric tissue suffice to compensate for the effect of the plugging of one of the vessels. When thromboses are present, they appear to be always due to the ulceration itself. In fine, all the symptoms of dyspepsia should be referred to inflammation of the mucous membrane and the subjacent tunic. The acceptance of these dyspepsias as pure functional lesions must be given up.

May 23. *Lead-Colic.*—M. Mialhe, resuming the question of lead-colic, showed that very small doses of lead, if long continued, were enough to bring on colic.—M. Duchenne, of Boulogne, recorded a case of lead-poisoning in a woman whose daily occupation was to wrap up tea in tin-foil, and in whom, consequently, the metal only came into contact with the palm of the hand, and the fleshy extremity of the fingers.—M. Ruzé de Lavison did not share this opinion; he did not believe that a small amount of lead is sufficient to produce the disease. He did not think that the use of lead-reservoirs and lead-pipes sufficiently explain lead poisoning.—M. Mialhe was of opinion that the comparatively frequent occurrence of lead-poisoning on board-ship bears relation to the constant presence of basic alkaline chlorides in the sea-air. Hence arises the necessity of restricting the use of lead and lead compounds as much as possible at sea.—M. Le Roy de Méricourt, in reference to the term saturnine myosalgia, proposed by M. Briquet, believed that this term represents but incompletely the assemblage of symptoms brought on by lead-poisoning. Faradisation is not so efficacious as M. Briquet asserts. It is not by this means that the differential diagnosis between lead-colic and the dry colic of hot countries can be established. According to this speaker, the doctrine of telluric miasmata, so far as it concerns the dry colic of hot countries, leads to nothing, whilst that of lead-poisoning is fruitful in successful results, since from it arise a certain prophylaxis and efficacious treatment.

ACADEMY OF SCIENCES IN PARIS.

March 20. *The Water of the Seine.*—M. Boussingault communicated the result of the analysis of the water of the Seine taken on March 18, 1876, above the bridge of Austerlitz. The results were—ammonia, 33 centigrammes; nitric acid, 1 gr. per cubic meter.

Muscarine.—M. Alizon sent a paper on *Amanita muscaria* or *Agaricus pseudo-aurantiacus*. Besides the usual phenomena of poisoning, experiments have shown, in birds especially, clear symptoms of asphyxia and great disturbances of calorification. After the subcutaneous injection of a sufficient dose of muscarine into a frog, the heart stops in diastole, whilst retaining its muscular irritability. Atropine prevents.

the production of this effect. A small fragment of muscarine placed on the heart also induces diastolic stoppage, even after preliminary destruction of the entire cerebro-spinal system. Atropine appears to act differently from a large number of other alkaloids which re-establish the cardiac contractions after the action of muscarine. In mammalia, muscarine first produces acceleration of the heart-beats, then slackening; arterial pressure gradually falls and rises under the influence of atropine. In the respiratory organs are observed, 1st, an increase in the number of the respiratory movements, then a gradual return to the normal amount (small doses); 2nd, an increase followed by a decrease (medium doses); 3rd, a progressive diminution until the final stoppage (poisonous doses). All these modifications are observed after the preliminary section of the pneumogastric nerves, and disappear by the use of atropine. The disturbances of temperature are as follows: 1st, a slight rise in the temperature, not constant, and appearing one or two hours after poisoning (small doses); 2nd, a fall from 1 to 2 degrees, then a return towards a normal temperature (medium doses); 3rd, a very decided fall preceding death (poisonous doses); 4th, the raising of the temperature by atropine.

April 10. *Sugar in the Blood*.—M. Claude Bernard continued his historical and critical account of the formation of sugar in the blood (see meeting of January 17). These experiments tended to show that the only exact process for finding sugar in the blood, is that which has been followed by Magendie, and by Tiedemann and Gmelin.

The Size of Organs.—A paper by M. Franck related to the change in the size of organs in their relations with the circulation of the blood. By the aid of a special apparatus, the writer recorded the following facts. The hand undergoes variations in bulk, of which the progress is identical with that of the pulsations of the radial artery. The size of the hand decreases during respiration, and increases during expiration. Arterial compression diminishes the size of the organ, and venous compression increases it. Coldness or faradisation of one hand diminishes the size of the other by reflex action.

The Spleen.—MM. Malassez and Picard communicated the results of their new researches on the functions of the spleen. Washings out of the spleen had demonstrated to them that iron exists in that organ in the condition of hæmaglobin, independent of the blood contained in the vessels.

The Acoustic Nerve.—A paper by M. Cyon was designed to show the physiological relations existing between the acoustic nerve and the motor apparatus of the eye. The conclusions of this memoir may be summed up as follows. 1. Disturbances in the motor apparatus, occasioned by operations on the semicircular canals, are not produced in an uniform manner in animals of different species; in frogs, these disturbances are limited almost exclusively to the vessels of the trunk; in pigeons, the muscles of the head are principally affected; in rabbits the disturbances are specially those of the muscles of the eye. 2. The opinion lately maintained by M. Goltz and M. Cyon, and accepted by the majority of physiologists, that the loss of equilibrium which supervenes on the section of the semicircular canals is caused by the erroneous ideas conceived by the animal operated on regarding the position of its head in space, can no longer be maintained. 3. The movements of the eyeball are not compensatory

movements; they are the direct and immediate consequence of the lesion of the canals. 4. By the excitation of the horizontal canal in the rabbit, a rotation of the eye on the same side is produced, so that the pupil becomes directed backward and downward; that of the posterior vertical canal produces a deviation of the eye, with the pupil directed forward and a little upward; that of the anterior vertical canal backward and downward. 5. The excitation of a canal always produces ocular movements in both eyes; but, in the eye of the side opposite to the injured canal, movements in a contrary direction to those of the eye of the other side take place. 6. The pupil contracts on the side on which the excitation takes place, and remains dilated on the opposite side. At the very moment of the excitation, the contraction of the motor muscles of the eyeball has a tetanic character. 7. The oscillatory movements disappear when the acoustic nerve of the opposite side is divided. Fresh excitations of a semicircular canal no longer produce anything except tetanic excitations. The excitation of an acoustic nerve, produces violent rotations of the two eyeballs. 8. The division of an acoustic nerve induces a strong deviation of the eyeball of the same side, so that the pupil becomes directed downwards, whilst on the other side the eye is carried upwards. This deviation disappears after the section of the second acoustic nerve. 9. The movements of the head and trunk observed in pigeons after the lesion of the semicircular canals, are described in a very precise manner by Flourens in his classic writings.

Persistence of the Intermaxillary Bone in the Human Subject.—M. Rougon recorded traces of the separation of the intermaxillary from the maxillary bones in modern human crania, found in the mountainous region which stretches from the Dômes to the Dores, in the department of the Puy-de-Dôme. He had never observed this characteristic in any cranium from the Limagne, even in the lowest types, any more than in the neighbourhood of Paris; the only French cranium of which he was aware as presenting this peculiarity, was that of a prognathous young woman, found in the environs of Saint Acheul. It is a question whether this fact should be regarded as a characteristic of one of our most ancient races, or simply as a local peculiarity resulting from degrading influences.

April 17. *Amygdalitis*.—M. Bouchut presented a note on chronic caseous amygdalitis. He observed that there are chronic anginae characterised by the permanence on the tonsils of white points and spots, which cause much anxiety in families, but, however, are of no importance. These white spots are caseous products which have their origin in follicles of the hypertrophied tonsil, attacked by chronic inflammation. They are formed of fatty matter, odorous or inodorous, and vary from the size of a grain of hemp-seed to that of a mulberry, which they sometimes resemble in external roughness. They remain unchanged for weeks and months, and are reproduced as fast as they are removed with a curette, with which, if this plan be persisted in, they may be permanently removed.

Electrical Variations of the Muscles.—At the meeting of April 24, M. Marey communicated a note on the electric variations of the muscles, more especially of the heart, studied by means of Lippmann's electrometer. The general result obtained by these experiments showed that the phases of the

electric variation of a muscle are similar to those of the work done by it.

Arsenic.—M. Braine communicated some indications as to the chemico-legal search for arsenic. The conclusions of this memoir were as follows. 1. The chemical expert ought to use in the chemico-legal search for arsenic or antimony a very large flask, a third or fourth part filled, and to introduce into it alternately in small quantities acidulated water and the suspected liquid; in this way the arsenic or antimony, however small may be the quantity in the liquid tested, will always be either entirely or in greater part collected in the condensing tube. 2. The method of reagents by the gaseous method is very superior to any other method in the search for arsenic and antimony. Five or six reactions, and even more, may also be produced at will on a very small quantity of material without displacing it. The deposit may also be volatilised, oxydised and caused to crystallise, entirely or in part in the condensing tube, closed at both ends, and afterwards opened to submit it like arsenic and antimony themselves in a liquid condition to the action of appropriate reagents of the gaseous method. 3. This method may be employed with equal advantage to characterise the arsenic and the antimony which will be mixed together, after having separated them by a proper degree of heat, either in the metallic state, or after a preliminary oxydation. 4. As arsenic frequently brings with it bodies in the utricular condition into the condensing tube of Marsh's apparatus; and as arsenious acid may there show dimorphism or other anomalies of crystallisation, experts ought to take notice of these peculiarities. Arsenic and antimony are best tested for by the method depending on the formation of gaseous compounds of those metals.

Pulmonary Respiration.—M. A. Sanson presented a paper on the study of pulmonary respiration in the larger domestic mammalia. The species and race influence pulmonary respiration; the more uncovered surface is displayed by the lung, the more carbonic acid is eliminated by the animal; the male shows a greater activity of respiration than the female. The gaseous mixture contained in the lungs is more frequently renewed in the young than in the old. Alimentation, provided it does not modify the general condition, does not exercise any influence on the pulmonary respiration; neither does labour, when it is over. Temperature has a very decided influence on the elimination of carbonic acid, which increases with heat; atmospheric pressure acts in an inverse manner. Thus the elevation of the temperature may compensate for the lowering of the pressure.

BIOLOGICAL CONFERENCE AT SOUTH KENSINGTON.

The first Conference of the Biological Section was held May 26, at the Loan Collection of Scientific Apparatus, at the South Kensington Exhibition. Dr. J. Burdon Sanderson, the President of the section, opened the proceedings with an address. He said those subjects of which the collection contributed the best examples might be classed as follows: first, the methods of registering and measuring phenomena exhibited by plants and animals; secondly, the methods of investigating the eye as a physical instrument; and thirdly, the methods of repairing the tissues of plants and animals for

microscopic examination. He proposed to confine his remarks to the first of these. He considered that the study of the life of plants or animals is, in a very large degree, a matter of measurement, as we must compare the object studied with some well-known standard, which is really but a method of measurement; and he wished to impress that, in biology, comparison with standards is quite as essential as it is in physics and in chemistry; biology, however, differing from these sciences in not being immediately concerned in establishing standards, but accepting those which these sciences supply. Even microscopes, which are the first objects which strike one on visiting this collection, may be regarded as measuring instruments. Not wishing to dwell upon the application of measurement to the form of the blood corpuscles, he turned to the question of the number of the corpuscles, which is of value to the pathologist and physiologist as a means of ascertaining the quantity of that very important substance, the colouring matter of the blood. This may be determined with tolerable accuracy by chemical means, by estimating the amount of iron in a given quantity of blood; but the process is a slow one, and the quantity required is considerable. The microscope supplies a method by means of which we can find out this important fact from a single drop, such as we can obtain from anyone's finger. He reminded his audience that a cubic millimètre, *i.e.* the cube of 0.04 inch, contained five millions of these blood corpuscles. This number would be, of course, too many to count; therefore a smaller quantity of the blood must be taken. The way in which this is accomplished is the following. A capillary pipette, which will only take up one cubic millimètre of blood, is filled; this blood is then diluted with two hundred and fifty times its bulk of serum; of this diluted fluid a layer, one-fifth of a millimètre, is examined under the microscope, by means of an object-glass, which is covered with a perforated plate one-fifth of a millimètre in thickness; of this the square of the fifth of a millimètre may be cut off by a micrometer, and the number of corpuscles readily counted. He next called attention to the mode of measuring the time occupied by a reflex process, such as sneezing, etc., which processes are found to consist of three stages: first, the stage of reception of an impression; secondly, a stage corresponding to the changes in the brain; and thirdly, the process by which the effect is conveyed to the muscles which act. This measurement is usually represented graphically by marking the periods upon a revolving cylinder. The periods are marked by signals given through the means of a voltaic circuit, and an apparatus by means of which a variation in the circuit can be made so as to record a signal. The same act may record the time of a signal on the cylinder, and send an impression to a sensory nerve; the individual experimented upon may then make a signal as quickly as possible, and thus the time required for the three stages is recorded on the cylinder. The time occupied by these different stages may be analysed by varying the conditions of the individual—*e.g.*, 1. when he knows the time when the signal is to be given; 2. when he expects the signal but does not know the time; 3. when he does not expect the signal. The experiments were then performed, and the tracings handed round. In each of these experiments the time differed, being longest in the last and shortest in the first. The

exact measure of the time occupied by each of these periods may be then compared with a physical standard. For this purpose, a tuning-fork of a known rate of vibration is made, by means of a little brass pointer, to scratch a record, say of each hundredth part of a second, on the paper side by side with the records of the various signals. Thus, a comparison with an absolute standard of time is effected.

Dr. J. D. Hooker then demonstrated the plans, and described the arrangements contemplated in the laboratory which is in process of erection at the Royal Gardens, Kew, for the purpose of the investigation and study of physiological botany. He believed that the establishment of this institution would promptly lead to good work and to the advancement of scientific botany in England, which country, he considered, had already done more for botanical science than any other.—Professor W. T. Thiselton Dyer then demonstrated an apparatus constructed by Professor Reineke for observing the velocity of the growth of plants. This instrument keeps a record of the progress of growth by making and breaking a voltaic circuit at certain stages of progress. By means of the instrument, it has been found that the maximum rate of growth takes place at dawn and the minimum about evening twilight; the rapidity of growth diminishing during the day and increasing during the night. He also demonstrated an apparatus for showing Knight's experiment on the influence of gravity on the direction of the growth and stems of budding plants. The seeds are fixed on needles, which radiate from a disc of cord set on an axis, which can be turned at once.—Professor Marey then proceeded to explain some of the instruments in his collection. He considered that it would be desirable that a physician should be able to see through his patient as if he were transparent. This not being possible, we must attempt by every mechanical means at our command, to explore the various organs and parts, and to study their functions. He hoped to be able to demonstrate the mode of application of some means of investigation which had been recently introduced by him. To study the motions which occur in the internal organs of the body, the most accurate method is that of graphically representing the amount of motion and the time it occupies. We cannot, however, apply the organs directly to the recording cylinder; he, therefore, had contrived a means of transmission of the motions by which they may be communicated to an air-containing cavity, which is covered on one side by thin elastic membrane; from this the movements are transmitted through a hollow tube to another similar cavity (tambour), the membrane of which moves a lever, which may be made to record its movement on a cylinder worked by watch-work. He then proceeded to demonstrate the application of this method to the movements which occurred in muscles when thickening, which occurs while their length contracts. He also showed his well-known stethograph in action, and applied the same method to record the movement produced on the chest-wall by the heart-beat—cardiograph. He then demonstrated the ordinary sphygmograph, and also how the pulse-tracing might be recorded by means of the same method of transmission of one tambour to another. Finally, he gave an account of a new and beautiful method of recording the amount of blood contained in the vessels of the hand under different circumstances. This consists of a glass vessel full of water, into which the hand can be thrust and

fastened in, so as to be immovable and air-tight; from the upper part of the vessel a tube passes, which, when connected with a tambour, registers the changes in the bulk of the hand. These changes in bulk must of course be caused by the varying amount of blood contained in the part, as the hand can increase in size in no other way. Thereupon the lever connected with the tambour moves with each beat of the pulse, and by means of this instrument it can be shown that when the muscles of the hand are in action a greater supply of blood goes to them.—Mr. Schäfer demonstrated Ludwig's apparatus for showing the action of various poisons on the heart of a frog cut out and attached by the aorta to a small recording mercurial manometer. The poisons are supplied from a small funnel a few inches above where they are mixed with the serum feeding the heart.—Mr. Gilbert then made a communication on the subject of the mode of formation of fat in animals. His results, which were obtained some years ago by fattening pigs on various dietaries, did not appear to correspond exactly with those of Pettenkofer and Voit.—Mr. Sclater called attention to the great utility of Zoological Gardens as a living natural history museum. He then referred to some beautiful drawings which were contributed by the Zoological Society to the collection, and which ornamented the walls of the biological section.—Mr. Gaskell explained a diagram of an apparatus called the plethysmograph, conceived by Dr. Mosso, for registering the amount of blood in the forearm. He also demonstrated a model of the recording apparatus. The whole thing consists in a water-tight case, into which the forearm can be introduced, and which, when filled with water, communicates with a glass vessel balanced on pulleys, in such a way that the least overflow from the water-case causes an alteration in the level of the latter, the small balancing weight being so adjusted as to record on a slowly rotating cylinder. This instrument is extremely sensitive, so much so that the least change of mental condition producing an increase in the blood-supply of the brain caused a corresponding decrease in the amount of blood in the arm.—Dr. Lauder Brunton demonstrated many forms of instruments for calculating the elasticity and contracting energy of muscle—myographs, etc. By means of these instruments, he showed how it was proved that the elasticity and contractility of muscle act in accordance with certain laws which make them most advantageously circumstanced for performing rapid and powerful movement.

On Monday, May 29, Dr. Klein described some instruments sent from Prague by Professor Hering, one of which was devoted to artificial respiration, and the others to recording the tracings of various vital phenomena.—Professor Rutherford demonstrated the mode of using the freezing microtome devised by him, in which the preparation to be cut is frozen in gum-solution, and, while still under the influence of the freezing mixture, can be cut in an ordinary microtome.—Dr. Urban Pritchard described several other forms of freezing microtomes; and demonstrated one which he himself had contrived, which for simplicity and rapidity of action seemed to stand alone.—Professor Gerald Yeo demonstrated some microtomes used when the preparation is imbedded and not frozen: the most striking of these are Fritsche's inclined plane microtome, and the quadrant microtome for varying the angle of section.—Professor Flower showed a new method of ar-

ticulating museum skeletons, so that each individual bone could be examined by the student.—Professor Donders demonstrated the use of many of the instruments in his special collection. The cyclo-scope consists of a head-support and a movable arc, in various parts of which induction-sparks can be produced. These in a dark room look like stars, and then the field of vision may be investigated. By means of the isoscope, the angle of meridians of apparent vertical and apparent horizontal direction, either separately or together, at any degree of inclination of the plane of fixation, and at any degree of convergence of the lines of fixation is determined. He also showed the horoptroscope, for the determination of the horopter plane at various degrees of inclination of the plane of fixation, and at different degrees of convergence. He also demonstrated the mode of using the noematachrometer and the noematograph.—Dr. Royston Pigott gave an accurate description of a new refractometer, for ascertaining the mean refractive index of plates of glass or lenses.

CORRESPONDENCE.

THE CONSTRUCTION OF OPHTHALMOSCOPES.

(To the Editor of the LONDON MEDICAL RECORD.)

SIR,—Would you kindly allow me a few words in regard to the construction of ophthalmoscopes? I regret to see from a review of my *brochure* on refraction as determined by the ophthalmoscope, which appeared in your issue of April 15, that I may have unwittingly done injustice to English inventors. This is all the more annoying to me, as I have always recognised the fact that England's contributions to physiological optics, though freely drawn upon by others, have never been as adequately acknowledged as they deserved. To find myself, therefore, even by implication in this category, distresses me.

In the review in question, it is stated, *à propos* of various ophthalmoscopes now in vogue, that the author 'describes modifications which he seems not to know were proposed in England as far back as the beginning of 1873.'

The point of this, I take it, is not that I describe these modifications, but that I fail to give credit to those who originated them, and that I assume for myself what is really due to others. If this be true, no one could regret it more than I; and the writer of the review, Dr. Purves, is right in supposing that I was ignorant of the fact, and still am.

Of the modifications of the instrument which are described in my pamphlet and which bear the slightest resemblance to those of English make, the first devised by me appeared in 1869, and the others in 1872; and these could not therefore, have been taken from 'modifications proposed in England as early as the beginning of 1873.'

I am, therefore, at a loss to know to what instruments Dr. Purves refers. Indeed the only English modifications of ophthalmoscopes for the determination of refraction which were known to me at the time when my paper was written were, first, an instrument made by Smith and Beck in 1869, directly from one of mine, which was furnished by a friend then in England at the request of one of the Surgeons at Moorfields. This instrument was afterwards ex-

hibited at some of our ophthalmological societies by one of the firm then in this country, and somewhat to the edification of the members, as a purely English invention. The second is Dr. Oldham's instrument.* At the International Ophthalmological Congress held in London in 1872, and at which many Americans were present, Dr. Oldham did me the honour, perhaps I might say the justice, to speak of the instrument which he then presented as a modification of my own, which appeared three years earlier. As in his paper, published in the transactions of the Society, my name does not occur, probably Dr. Purves, as well as many others, were under the impression that the instrument there mentioned was a strictly original design. That there is a striking similarity between Dr. Oldham's instrument, that made by Smith and Beck, and my own, cannot be denied; and for this reason I thought that one description, and that the original one, might serve for all three. This seems to me all the more pardonable, as Mr. Carter, in describing my instrument in his late work, appends as an illustration of it a cut made for Dr. Oldham's, which appeared in the transactions of the International Congress in 1872.†

There is, however, one dissimilarity between Dr. Oldham's and my instrument, which is so great as to deserve notice, and that is the size of the mirror hole. This in Dr. Oldham's instrument, as in some others of English make, is so small as to defeat to a great degree the very end for which it was designed, since however well the mirror may illuminate the fundus of the observed eye, but few rays can enter the observer's eye through so small an aperture. The brilliancy of the picture is therefore seriously reduced, and the more, the stronger the curvature of the glass used, if this be negative. But a more serious defect is the action of so small a hole on the real focal value of the glass. For example, with a hole as small as that in Dr. Oldham's ophthalmoscope, $+\frac{1}{36}$ has barely a perceptible effect on parallel rays, and is completely neutralised by $-\frac{1}{96}$. Its real focal value is therefore only one-third of what it is marked on the instrument. So too $+\frac{1}{20}$ is really $+\frac{1}{20}$, and only one half as strong as represented, and so on in a proportionate rate with the whole series of twelve glasses down to $+\frac{1}{5}$, which is the first glass which corresponds with the number given to it on the disk. Precisely the same thing occurs with the negative glasses.

No ophthalmoscope can be made with a silvered mirror, which is not liable to such a disturbance from its action as a diaphragm; but the error can be reduced to a minimum by making the size of the hole equal to 3.75 millimètres in diameter, which is the size of the earlier instruments, and the same as used in my first modification, and which, all things being

* Mr. Couper's Modification, mentioned by Mr. Carter as recently made by Mr. Hawksley, I have not yet seen, but if made so that the obliquity of the mirror is not connected with the disk, it differs from all American instruments, and is open to precisely the same objections that were pointed out years ago in regard to similar ophthalmoscopes, where loss of field of view and illumination is so great as to render their use impracticable with glasses of high power.

† I must here do Dr. Noyes the justice to say that a mistake occurs in Mr. Carter's late work in regard to his instrument. Dr. Noyes's ophthalmoscope is not, as stated and figured in Mr. Carter's book, a modification of mine, but a totally different instrument, designed for office practice, and one to which all the glasses in Noyes's test cases can be fitted at will. It also has a movable mirror.—*Trans. Amer. Ophth. Society, 1870.*

considered, is the best for purposes of illumination and accuracy of measurement.

It follows at once from the above, that it is impossible to determine with an ophthalmoscope, with a mirror hole of $1\frac{3}{4}$ or even of 2 millimètres in diameter, the lighter, or even the moderately strong, errors of refraction with any accuracy; and this may perhaps be the reason why so much doubt exists among English ophthalmologists as to the advantages of the method, and why this whole subject is so inadequately treated even in their latest works. Still, in time, and with suitable instruments, there is no reason why the method by the upright image should not be regarded with the same high appreciation in England that it has been in America for the past ten years.

In regard to the spring for centring the glasses, which would at once suggest itself to the least inventive mind, I would say that it was proposed in this country as early as 1869, and its use dispensed with, because where the mirror-hole is 3.75 millimètres in diameter, reflexions arose from the edges of the canal unless the diameter of the glasses were made disproportionately large, thus increasing unduly the size of the disc. These annoying reflections can be entirely removed in dispensing with the spring by decentring the glass, by moving it a little towards the right or left, as occasion requires.

When, however, the diameter of the glasses was reduced through perfection of optical work to four millimètres, it became necessary to centre the glasses to avoid confusion in bringing them into position.

I still think that the alleged advantage of rotating the disk without taking the instrument from the eye is rather apparent than real, and to those who really wish to do accurate and close work of no use whatever, as there is not room enough between the nose of the patient and the edge of the disk to permit such rotation, if the instrument be held as close to the observed eye as a proper examination demands. As a rule, it is only an aggravation to the patient and to the observer.

For myself, I much prefer the older instrument, with the larger glasses, and a larger mirror-hole. I think also that a shallow cylinder is preferable to a flat disk, because the glasses do not become soiled by handling.

In what I have said I have of course alluded only to ophthalmoscopes, which, however serviceable they may be for all the uses of the instrument, are particularly adapted for that of the upright image.

Hoping to learn from Dr. Purves through your columns, to what instruments he has reference which are described in my pamphlet, and which are of English origin, I remain very respectfully yours,

EDWARD G. LORING.

RECENT FRENCH BOOKS.

Published by J.-B. Baillière & Sons.

Procédés pratiques pour l'analyse des urines, des dépôts et des calculs urinaires, par le docteur E. Delafosse.

Published by V. A. Delahaye & Co.

Les causes de la gravelle et de la pierre, étudiées à Contrexéville pendant neuf années de pratique médicale, par le docteur Debout d'Estrées, 1 vol. in-8 avec 52 figures dans le texte. Prix: 3 fr.

De la dilatation médiate, nouveau mode de dilatation lente et progressive, appliqué au traitement des rétrécissements de l'urètre d'origine inflammatoire ou blennorrhagique, etc., par le docteur Langlebert, in-8. Prix: 50 c.

La conferencia sanitaria internacional, por el doctor D. Francisco Mendez Alvaro. Madrid, 1876.

Criterio médico-quirúrgico para la aplicación de la iridec-tomía en el glaucoma, por doctor D. Luis Carreras y Arago. Barcelona, 1876.

Traité pratique des maladies du larynx, précédé d'un traité complet de laryngoscopie, par le docteur Ch. Fauvel. Prix: 20 fr. 1876.

De la sensibilité générale et de ses altérations dans les affections mélancoliques, par le docteur Senal. Prix: 3 fr. 50. 1876.

De la Goutte, étiologie, formes, périodes, transformations et manifestations primordiales, par le docteur P. Bouloumié. 1875.

De l'emploi de l'Apiol dans le traitement de l'Aménorrhée et de la Dysménorrhée, par V.-A. Fauconneau-Dufresne. 1876.

Études de dermatologie.—Le Psoriasis herpétique aux eaux de la Bourboule.—Psoriasis superunguéal, par le docteur A. Vérité. Paris, 1876.

Leçons sur les kératites, précédés d'une étude sur la circulation, l'innervation et la nutrition de l'œil, et de l'exposé des divers moyens de traitement employés contre les ophthalmies en général, professées par F. Panas, rédigées et publiées par H. Buzot. 1876. Prix: 4 fr.

Clinique ophthalmologique de l'hospice des Quinze-Vingts. Compte-rendu statistique des opérations pratiquées pendant l'année 1874, par Fieuzal. Prix: 3 fr. 50.

Le diabète sucré et son traitement diététique, par le docteur Arnaldo Cantani, traduit et annoté par le docteur H. Charvet. Prix: 8 fr.

Étude sur la ladrerie chez l'homme comparée à cette affection chez le porc, par le docteur Joseph Boyron. Prix: 2 fr.

De la sensibilité générale et de ses altérations dans les affections mélancoliques, par le docteur Semal, médecin directeur de l'asile d'aliénés de Mons (Belgique.) Prix: 3 fr. 50.

De l'anesthésie et de l'émplépie hystérique, par le docteur F. Desbrosse. Prix: 2 fr.

De l'empoisonnement par la nicotine et le tabac, par le docteur Eugène Fonssard. Prix: 2 fr. 50.

De la valeur de la cautérisation modificatrice appliquée au traitement de la tumeur et de la fistule lacrymales, par le docteur E. Chamouin. Prix: 2 fr.

De la fluxion ou congestion pulmonaire simple chez les enfants, par le docteur Hirm. In-8. Prix: 2 fr.

Recherches sur les causes de l'épilepsie et des convulsions épileptiformes, par D. Hugon, interne des hôpitaux, etc. In-8. Prix: 2 fr.

Essai sur l'esthiomène (de la région vulvo-anale), par le docteur Fiquet. In-8. Prix: 2 fr.

Published by Lawwereyns.

Précis élémentaires de l'art des accouchements sous forme de demandes et de réponses, par le docteur C. Girard, professeur d'accouchements, lauréat de la Faculté, ancien interne des hôpitaux, avec figures intercalées dans les textes. Paris, 1876.

MISCELLANY.

M. VULPIAN has been appointed a member of the Council of the Assistance Publique in Paris.

M. LE FORT has been appointed a member of the Paris Academy of Medicine in the section of surgical pathology, in place of M. Demarquay.

LONDON HOSPITAL.—Dr. Charles Meymott Tidy has been appointed lecturer on chemistry at this hospital, vice Dr. Letheby, deceased.

FREE CLINICAL LECTURES.—The free course of clinical lectures, at Birmingham, which are being delivered during the present session at the Children's Hospital, are attended by a class of fifteen students.

CEREBRO-SPINAL MENINGITIS.—Epidemic cerebro-spinal meningitis, unknown here until a year ago, is still prevalent in Birmingham and the district. Most of the sufferers are children or young adults. The disorder varies much in severity and duration, in some instances being fatal in three or four days, in others running a course of several weeks.

MISS JULIA SINCLAIR has just been admitted as Doctor of Medicine at the University of Zürich.

DR. LLEWELYN THOMAS has been appointed Honorary Physician to the Royal Academy of Music, Hanover Square.

NEW SCIENCE COLLEGE.—The erection of Sir Josiah Mason's magnificent Science College is in rapid progress. The site and buildings will cost about 150,000*l.*, while 100,000*l.* are devoted to endowment. A new medical school will probably form a department of the College.

SCIENTIFIC RESEARCH.—It is understood to be in contemplation to increase the grant of 1,000*l.* per annum placed some years ago, on the intervention of Earl Russell, at the disposal of the Council of the Royal Society for scientific researches. The amount proposed to be added will, it is said, be 4,000*l.*

GOING INTO HALF-MOURNING.—In the course of a paper read by Mr. O. C. Stone on 'The Country and Natives of Port Moresby, New Guinea,' at the last meeting of the Royal Geographical Society, he stated that, 'In case of a death, the relatives of the deceased went into mourning by painting their faces with plumbago, and sometimes by wearing armlets composed of the bones of the departed.'

NIGHT MEDICAL SERVICE IN PARIS.—Since Jan. 9 of the current year, the date at which the night medical service of Paris commenced, the services of the medical men who have inscribed their names at the Prefecture, have been called into requisition by 1,180 patients. Out of this large number nine persons only died before the arrival of the medical attendant. A sum of 10 francs, to be reimbursed by the patient if he is able to do so, is allotted for every visit; and as up to the present time the liquidation of the sums advanced has gone on with great regularity, the credit of 10,000 francs appropriated to the service by the Municipal Council is scarcely touched on as yet.

THE EUCALYPTUS GLOBULUS.—The medicinal properties of the *Eucalyptus globulus* formed the subject of an interesting paper read by Dr. Fedeli at the Roman Academy of Medicine on April 30. After adverting to the natural history of the plant, and citing a host of witnesses as to its virtues as a febrifuge, Dr. Fedeli proceeded to describe the curative powers of the various preparations of the *Eucalyptus*, especially of the alcoholic tincture, not only in cases of periodic fever and of palustral cachexia in general, but also in ailments of an atonic or anæmic nature. In the discussion that followed the reading of the paper, Dr. Colapiete ascribed the virtue of *Eucalyptus* in malaria to its cultivation increasing the quantity of ozone in the air; while Drs. Marchi and Terrizi opposed this view, the latter maintaining, as the result of experiments made on bacteria and micrococci, that ozone instead of diminishing actually increases the fermentative action of the malarial poison.

A ROMAN METHOD OF INTERMENT.—An interesting discovery was made in the Roman Cemetery at York last year. A large stone coffin was uncovered, containing another of lead. The lid of this bore a curiously corded pattern impressed upon it. When this lid was removed it was found that the corpse had been laid upon a bed of gypsum, which had also been poured over it, so that a perfect impression of the body was obtained. The head seemed to have been raised originally upon a pillow, so that it was above the gypsum. And here a remarkable sight presented itself. The facial part of the skull had given way, so that the back of the head was precipitated forward, and on it was the long, folded tress of a young Roman lady, with two jet pins, beautifully wrought, remaining in it. The hair had preserved its colour, auburn of several shades; it had kept its smoothness, and was so limp when first exposed to the light that it might have been washed and almost combed. It now constitutes one of the choice treasures of the York Museum, and shows no sign of decay.

AN AUTOPSY AT THE HÔTEL DIEU.—The *Academy* describes a picture by M. Gerves, now exhibiting in the Paris Salon. It is called 'Une Autopsie à l'Hôtel Dieu,' and is described as follows by our contemporary. 'The circular table covered with its white linen cloth stands in the centre, under the vaulted roof of a thick-walled room. The rise of one great arch is seen near the centre springing towards the left, and through loop-holes cut on each side of it shoot rays of light which fall on the emaciated corpse which lies on the table, and on the group which surrounds it. At the head, on the right, stands the attendant, his cap drawn over his eyes, his blue sleeves rolled up to the elbow; indifferent and business-like, he steadies the table with both hands, whilst the young fair-haired surgeon, unconscious, calm, intelligent, animated with the divine curiosity of science, proceeds with his work. The scalpel rests on the inner side of the right thigh, and the exquisite delicacy of a practised touch is observed and rendered with consummate truth. Between these two figures stands a third, a medical student, and his attitude, which expresses neither the indifference of the attendant, nor the dignified inquiry of the master—a little conscious, a little bold, yet really interested (his hand nervously repeat the movements which he watches)—is finely discriminated. The white of the broad sheet which covers the table on which the body lies is further massed by the customary white bib-aprons worn alike by those who operate and those who assist, and the tone of the flesh has been delicately felt in relation to it; everywhere the relative values of each varying tint are so just that they speak of a steady habit of exact and patient observation, and the quality of light which has been thus obtained is so real in effect that the air seems to pass vibrating through the picture.'

PROVISION FOR SICKNESS AT THE PHILADELPHIA EXHIBITION.—On this subject the *Boston Medical and Surgical Journal* of May 18 writes: 'The hospital of the centennial exposition, which was to have been one hundred feet long, has been reduced to sixty, and some of the conveniences which would have made the building more comfortable during the hot months have been set aside because of lack of funds. The commission are now 1,500,000 *dols.* in debt, notwithstanding the 1,500,000 *dols.* voted by Congress. This deficit will undoubtedly be more than covered by the entrance fees. Ten thousand dollars per diem for 180 days (the duration of the exhibition) will put 1,800,000 *dols.* into the treasury of the commission. The anticipation is that far more than 20,000 persons will visit the exposition daily during its continuance. It may be that additional hospital conveniences will be erected so soon as the authorities realise, as they undoubtedly will, that there will be more extended calls upon the officers of the medical service than they are now inclined to believe. There will be a male and a female ward, but no provision has been made for a class of cases which will be certain to be well represented, namely, confinement cases. Statistics show that during the Paris exposition there were 780 cases of labour on the grounds. Summer weather in Philadelphia is so much more intense than that to which many who will attend the exhibition are accustomed, that the effects of heat, together with the great fatigue incident upon the work of visiting merely the principal buildings, will be certain in many cases to bring on labour. There are already 3,000 individuals who are living on the grounds. They make constant calls upon the resident physician. The probable additional cases of sickness during the exposition will give busy hours to the other officers of the medical service. It is anticipated that the most trying cases will be those of sunstroke. As many as twenty-seven persons in one day have been carried to the Pennsylvania Hospital alone during past summers. In the largest buildings of the exposition the temperature is much lower than that of the outer air, but it will be in wandering from one building to another that visitors will especially feel the effects of the tropical weather in Philadelphia.'

The London Medical Record.

Authors of Papers, Theses, &c., will assist in the preparation of summaries by our reporters, by forwarding separate copies of their works.

LEBERT ON THE VARIOUS FORMS OF ANÆMIA, AND THEIR TREATMENT.

The April number of the *Archives Générales de Médecine* contains an article by Professor H. Lebert on the varieties of anæmia or dysæmia, with especial reference to the form which he calls essential or idiopathic. It is an expansion of the chapter on this subject in his Handbook of General Pathology and Therapeutics, of which he has recently published a new edition in Germany.* He objects to the term 'oligocythæmia' as expressing but a very small portion of the truth, for anæmia is much more than a mere diminution of the red corpuscles. The composition of the blood is altered, though as yet chemistry has told us but little of the changes; the distribution of the blood is altered, and so is the innervation of the vascular system. Dysæmia would be a far better term, but he retains the old name of anæmia, as generally known and adopted. We may distinguish different forms by such terms as 'spoliative,' when it results from losses of blood, or of lymph, or of any secretions or excretions; 'in-anitive,' when it arises from insufficient nourishment; 'destructive' (*consumptive*), when the elements of the blood are consumed faster than they can be made, as in fevers of long duration; there is a dystrophic form when nutrition is profoundly altered, as in cancerous affections, tubercular diseases, chronic nephritis of different kinds, and forms of chronic poisoning. Anæmia may be termed 'neurotic,' when it results from a modified action of the nerves on the circulation and formation of the blood, as in chlorosis and essential or idiopathic anæmia.

Except as regards the lessened number of red corpuscles, organic chemistry has taught us but little of the changes in the blood in anæmia. No doubt there are difficulties in the way of analysis; and for one thing, anæmic patients can ill support the venæsection which would be required in order to analyse their blood. As regards the red corpuscles, there are slight forms in which they vary between 110 and 100 per 1,000, and a more severe form in which they are lessened to 65 per 1,000 (Andral), or even less. Andral and Gavarret mention even as few as 28 per 1,000 in human beings; and in sheep they have seen as few as 15 per 1,000 parts.

In average cases it is rare to find the red corpuscles diminished below half the normal number, except perhaps temporarily after very large and sudden losses of blood. The buffy coat met with in such cases is no proof of inflammation; on the contrary, it increases just in proportion to the poverty of

the blood. This was pointed out by Burserius long ago. Lebert does not approve of any distinction, being made between acute and chronic cases, for he has seen the one pass into the other. At present we have two great categories of cases of anæmia: one class, of which the causes are well known and quite definite; another class in which the causes are only known very imperfectly, or remain quite unknown. To the first class belong the spoliative anæmias, whose causes and symptoms are easily recognised. Amongst these we have losses of blood, losses of lymph, and loss from excessive and prolonged secretions or excretions. Anæmia from starvation also falls into this category, and then we may include the cases in which there is a consumption of the elements of the blood more rapid than their production, as in febrile diseases of long standing.

Amongst the forms of anæmia whose causes are either known imperfectly or are quite unknown, we must include chlorosis and essential or idiopathic anæmia, and perhaps also the forms of anæmia, in which there is cachexia. Class I. includes the impoverishment and alteration of the blood from definite causes, and Order I. spoliative anæmia, with diminution of corpuscles.

a. *Anæmia from Lymphorrhage, or Excessive Flow of Lymph.* Professor Lebert has described the dilated condition of lymphatic vessels, their varices, and the excessive flow of lymph in some cases in Virchow's Pathology (Virchow, *Pathologie et Thérapeutique Spéciales*, 2nd ed. vol. v. p. 666). He has seen cases in which it was possible, by pricking one of these varices, to obtain a small continuous jet of lymph—and thus to study the character of this fluid. These lymphorrhœas or lymphorrhages may occur spontaneously and repeatedly, and on each occasion such quantities of lymph may be poured out that great and severe anæmia may be the result. One of Fetzner's female patients lost at one time $3\frac{1}{2}$ large glasses of lymph, or about 1,750 grammes, or nearly 57 ounces. Lebert observed a loss of this kind, which lasted nine hours. In a case of Desjardins', frequent losses of lymph lasted ten or twelve hours each time, and on one occasion for forty-eight hours. Whilst a student, Lebert saw a curious case of this kind, in the summer of 1833 in Schönlein's wards. The patient had every six weeks a loss of lymph from varicose lymphatics in the scrotum, which furnished on each occasion some 500 grammes, or nearly 18 ounces of lymph. From this he became pale and anæmic. This loss of lymph had been mistaken for an abnormal secretion of milk. Lebert discusses the symptoms in this form, and shows that they are analogous to those produced by hæmorrhage—especially hæmorrhages from the uterus.

b. *Anæmia from Hæmorrhage or Loss of Blood.* As this form is familiar to English readers, we need not follow him in the details of this class. The concluding paragraph is, however, worthy of note. He points out that there is a class of case, in which, either from the spontaneous cessation of the hæmorrhages or from their cure by surgical means, as for example in piles, and uterine polypi (myomata), the patients appear to be perfectly cured, after very large losses, and do indeed regain the external appearances of health, if looked at carelessly, but when we study them more closely, we find them remain for many years still feeble, easily fatigued, irritable, and an easy prey to disease of various kinds. Lebert's second order of spoliative anæmia from loss of se-

* Lebert: *Handbuch der allgemeinen Pathologie und Therapie als Einleitung in das Klinische Studium und die ärztliche Praxis*. 2e ed. Tübingen. 1876.

cretion, by albuminuria, etc., including as it does anæmia from excessive secretion of milk, which he thinks rare; loss of albuminous fluids in chronic diarrhœas, and loss of albumen in the urine, prolonged sweating, prolonged suppuration, and the like, may also be dismissed, as familiar to English medical men.

c. Anæmia from Insufficient Nourishment or Starvation.—His remarks on this head are founded chiefly on the observations of Chossat, C. Schmidt, and Voit. He remarks with truth that schools, prisons, workhouses, and other public institutions afford a large field of study, in regard to this variety, to the practitioners of medicine. So do those diseases which cause dysphagia, whether they are the result of accident, as when caustics are swallowed, or proceed from cancer, tumours, or other morbid conditions. Cases of refusal to swallow food, of indigestion, and the like, are next discussed. Cases of cancer and canceroid tumours of the œsophagus, are complicated by the cachectic effects of the malady on the general system. So again, in phthisical ulcerations of the epiglottis, the effort to swallow is followed by regurgitation, and the patient is thus discouraged and hastens his own end by inanition. Cases of chronic poisoning by lead, mercury, and arsenic, are somewhat obscure as regards the etiology of their anæmia. The poison seems to attack the very sources of blood-formation, and of these we really know very little. Can we say that we know more about the causes of poisoning by marsh-miasmata? Lebert thinks not, for it exceeds what we might reasonably expect from the disordered digestion, and the disappearance of a certain number of red corpuscles in the spleen and the subsequent melanæmia do not sufficiently explain it. The anæmia consequent on disease of the heart and great vessels may be a trifle plainer, but is still obscure. Nor does chronic alcoholism appear to owe its anæmia to the effects of alcohol on the digestive organs alone. However, it is worthy of note that the anæmia in cases of chronic alcoholism is never so great as we observe in many other morbid states, for example, in cases of cancer.

Class II. Includes impoverishment of the blood from unknown causes. Under this heading we get chlorosis, and essential or idiopathic anæmia.

a. Chlorosis. People fancy they know all about this, because they are content to define it as a diminution of the red corpuscles, and of the iron in the blood. It was surely a happy instinct which led physicians to call this disease chlorosis, rather than anæmia. Almost all pathologists now admit the nervous element in these cases. There is no direct proportion between the percentage of the blood-discs and the functional troubles of chlorosis. Moreover, it often seems to arise when the hygienic conditions are favourable, and is by no means confined to the poor. Causes of spoliation are usually absent. We must therefore conclude that the formation of the blood is at fault. Why, we know not. Possibly the white corpuscles are formed in less quantity, or they are not transformed into red ones. We talk of nervous influence, but the real nature of this is unknown. The relative smallness of the heart and great vessels, invoked by Virchow, may apply to certain cases, but scarcely to the numerous and happy instances of cure which we see. What a strange state of anæmia is that, in which we see our patients pale and feeble and out of breath after some trifling exertion, yet able to dance

half the night without serious harm, or take long walks when the excitements of pleasure and contentment come to their aid! It is doubtful whether iron really effects most of the cures. Ferruginous mineral waters are, no doubt, useful; but there are other ingredients. Quinine and arsenic appear of great service in the neuralgic forms. Hygienic and moral treatment—or, as Lebert well puts it, both physical and moral hygiene—are as necessary as drugs, or even more so, in the treatment of chlorosis.

b. Essential or Idiopathic Anæmia.—Lebert prefers this name to that of 'progressive pernicious anæmia,' under which Biermer,* Gusserow,† Ponfick,‡ and Zimmermann§ have described this disease. Essential simply implies that the causes are unknown. The more he studies the disease, the more difficult does it appear to be to find a common cause. Biermer and others have maintained fatty degeneration of the heart as the common property of such cases. But it was only present in two out of three of our author's fatal cases, and cases equally serious have ended in recovery. Fatty heart, again, may be present without this severe form of anæmia. Further, he objects, so long, at least, as the recorded number of facts is small, to include a prognosis in the appellation of the disease.

The proclivity or preference of this form of anæmia for pregnant or recently delivered women was first observed by Lebert in 1853. He vindicates his claim to priority, or at least very early publication, by referring to the published reports of the medical department of the canton of Zürich for 1853,|| and from a French journal¶ he quotes the following *verbatim*. 'We have three times observed a peculiar chlorotic condition, hitherto undescribed—acute, febrile, and supervening quickly after delivery. The absence of any definite organic lesion, and the presence, on the other hand, of the clearest symptoms of chlorosis in women who have scarcely lost any blood at all in their labour or after it, cause us to look on this condition as a chlorosis due to the puerperal condition. One of our patients had general anasarca, without any albuminuria, and without any signs of Bright's disease. These three women all got well in from three to six weeks, under treatment by tincture of malate of iron, of which thirty to fifty drops were taken thrice daily.' In the German text he called it 'acute puerperal chlorosis,' but he admits that 'acute' is an ill-chosen term, because this condition appears to be developed during the pregnancy in some cases. Brief notes are given of these three cases. One was a woman, aged thirty-three, in good health till her fifth pregnancy. During this she had slight symptoms of anæmia. A few days after delivery (in which she lost hardly any blood, and the labour itself was natural) alarming symptoms of severe anæmia set in. When admitted to hospital, sixteen days after the birth of the child,

* Biermer: 'Vortrag gehalten in der deutschen naturforschenden Versammlung in Dresden, 1868.' *Vortrag in der ärztl. Gesellschaft des Cantons Zürich*, 1872, no. 1.

† Gusserow: 'Ueber hochgradige Anämie Schwangerer.' *Archiv. für Gynäkologie*, Band II. Heft 2, 1871, p. 218.

‡ Ponfick: 'Ueber Fettherz,' *Berlin. Med. Wochenschrift*, 1872, no. 1.

§ Zimmermann, *Deutsches Archiv für Klinische Medizin*, Band xlii. 2 Heft, p. 209.

|| *Züricher Jahresbericht über die Verwaltung des Medicinalwesens*, etc., im Jahr 1853.

¶ Lebert: 'Résumé des Maladies observées dans la division de clinique médicale de l'hôpital de Zurich pendant l'année 1853,' p. 14. *Gaz. Méd. de Paris*. Année, 1854.

there were no signs of organic disease, but she had a quick pulse, hot skin, and a hæmic bruit. The urine (s. g. 1017) appeared perfectly normal. For many weeks she remained in a restless, sleepless, and dangerous condition, spite of all treatment. But after rather more than two months she improved, and left the hospital in another month greatly better. There is in these cases a real rise of temperature, not easy to account for. Lebert notes the same in several cases of hæmatemesis, in which the temperature long remained above 99.5° Fahr., and even above 100.4° Fahr. The second case, in 1853, of this anæmia was in a pluripara, aged twenty-nine, a cotton-spinner. Her symptoms began in the third month of her third pregnancy, but were not alarming till three or four weeks after apparently natural labour, without hæmorrhage. Her state continued alarming till nearly three months had elapsed. After observing three more cases, in 1854, Lebert again drew attention to these cases in his reports of the medical department for that year. Again he published a fatal case in the *Wiener Medicinische Wochenschrift* (1858, no. 34 'Ueber essentielle Anämie.') This patient was only aged twenty-four. She had been married five years. She had had one child before, and the last labour, ten weeks before admission to hospital, was apparently quite normal. The lochia were rather scanty. There were, however, several attacks of epistaxis, short, and of no great severity, yet they seemed to greatly exhaust her. There were no signs of organic disease. She had a quick pulse (108-120); rapid breathing; hot, dry skin; extreme pallor of skin and mucous membranes, and all the rational signs of extreme anæmia, including the usual nervous symptoms. In spite of all treatment, she died fifteen weeks after her labour, in most complete collapse. All the viscera, even the brain, were extremely anæmic; the blood in the cerebral vessels, and indeed everywhere, was paler than it should be (pale red, or pale brown). The large vessels everywhere were nearly empty. There were scarcely any clots or blood in them, or in the heart. The liver was somewhat enlarged. The heart's substance was pale and soft (fatty?) Other cases are reported by Lebert in his reports for 1867, and in the Vienna journal quoted above. In a male patient, aged forty-five, a linen-weaver, the necropsy showed extreme anæmia of all the organs, some leucine and tyrosine in the lungs, and in the liver, which was slightly fatty. The heart's structure was healthy. The kidneys contained some inosite.

In a fatal case in a woman, aged fifty-five, besides extreme anæmia of all the organs, there was some fatty degeneration of the heart (and liver also), and the aortic valves were a little atheromatous. There was fluid in the pericardium, in both pleuræ, and in the peritoneal cavity.

The favourite age in the female is twenty to thirty years, but one woman, just mentioned, was fifty-five. The three men were aged thirty-nine, forty-four, and fifty years respectively.

Lebert thinks it not unlikely that there is a special neurosis of the great sympathetic, like the tachycardia exophthalmica of Basedow (Graves's or Begbie's disease). But at present this is mere theory. In remarking on the treatment of anæmia and its causes, Lebert insists on the folly of adopting roundabout and antiquated methods of stopping hæmorrhage, when we can do this by direct methods such as the ligation of arteries, or the removal of tumours or similar methods. He inveighs against the 'diète absolue,'

more common in foreign hospitals than in our own; he insists on the importance of artificial feeding in some cases, of rest, of change of air, the use of quinine (of which he prefers the muriate), arsenic, iron, especially the malate or pomate, of change of air, of cheerful society, and sometimes of good wine. In young females, he gives baths, and even bromide of potassium; in many cases of dyspepsia and chlorosis he finds alkaline and effervescent waters of use. A mixed diet is essential and scientific. Moral treatment in many cases is more appropriate than the rage for restoring iron to the blood.

W. BATHURST WOODMAN.

OSTROUMOFF ON THE INHIBITORY NERVES OF THE CUTANEOUS VESSELS.*

A. Ostroumoff has investigated the above subject in the laboratory of Professor Heidenhain of Breslau. By the term 'inhibitory nerve' the author means a nerve whose action is to diminish the activity of other nervous apparatus, and this the more, the more energetically it acts. An inverse relation exists between the degree of activity of the inhibitory nerves and that of the inhibited nervous apparatus. The author has sought to determine the condition of the cutaneous vessels by measuring the temperature of the skin. The animal employed was the dog, and the temperature was taken by very sensitive thermometers placed on the interdigital membrane of the foot.

1. *Stimulation of the freshly divided Sciatic Nerve by means of Tetanising Induction-Shocks.*—In order to prevent evaporation and drying of the nerve, its peripheral end was placed in a T-shaped glass tube, into the vertical stem of which electrodes in connection with the secondary spiral of the induction machine were placed. Stimulation of the peripheral end of the nerve was always followed by a contraction of the vessels, which was not temporary, as indicated by Goltz (LONDON MEDICAL RECORD, January 1876), but lasted for a long time, so that there was not a rapid exhaustion of the nerves which produce contraction. The reason of the difference in Goltz's experiments is to be sought in the fact that Goltz stimulated the nerve several days after it had been divided, i.e. when degeneration of the nerve-fibres and loss of excitability had already taken place.

2. *Tetanic Stimulation of the Sciatic Nerve three or four days after Section.*—In this case, tetanic stimulation was followed by a rapid increase of temperature. The result depends upon the time after section. After six days, no result could be obtained.

3. *Stimulation of the freshly divided Sciatic Nerve by means of single Induction-Shocks.*—Induction-shocks applied at intervals of five seconds produced an increase of temperature, which could also be produced, though more rarely, by tetanisation by very weak currents. From these experiments the author concludes that the sciatic nerve contains the proper vaso-motor fibres, whose stimulation causes contraction of the vessels, together with inhibitory fibres whose stimulation is followed by dilatation of the vessels. If the normal nerve-trunk be stimulated with single induction-shocks of the proper strength at regular intervals of five seconds duration, the influence of the inhibitory fibres is exerted; if the nerve

* *Pflüger's Archiv*, Band xii. p. 219.

be tetanised, and the currents do not lie between very limited and very small values, the effect of the vaso-motor fibres is the more pronounced.

After section of the nerve-trunk, the excitability of the vaso-motor fibres sinks more rapidly than that of the inhibitory fibres, so that during a certain period after section (three or four days) the excitability of vaso-motor fibres is nearly extinguished. At this time tetanic stimulation, because it acts on the still highly excitable inhibitory nerves, in opposition to the results on the normal nerve, no longer produces contraction, but dilatation of the vessels. The author believes in the existence of peripheral ganglionic apparatus placed in connection with the vessels. The tonus of the vessels depends upon the great nerve-centres and also upon these peripheral centres, on which two kinds of nerves act—the vaso-motor, by increasing their activity; the inhibitory, by diminishing it. The dilatation of the vessels, following section of the nerve, lasts very much longer than the excitability of the divided nerve itself. The dilatation also in the course of time diminishes, but it never completely disappears. The inhibitory apparatus of the cutaneous vessels is more like that of the salivary glands than that of the heart. The inhibitory nerves of the cutaneous vessels, like those of the chorda tympani, are not affected by a much larger amount of atropin than suffices to paralyse the inhibitory fibres of the vagus, and the secreting fibres of the chorda tympani. The blood-vessels whose vaso-motor nerves are divided, can no longer be regarded as simple elastic tubes, whose diameter is determined alone by the pressure exerted upon their inner surface. Very pronounced increase of the blood-pressure has no obvious dilating effect on the small arteries and capillaries. The pressure within the aorta may be doubled without the temperature of the skin being increased. Such vessels with divided nerves do not, however, conduct themselves exactly like quite normal ones. The capacity of the former to resist fatiguing influences is much more easily exhausted. In the author's experiments, the increase of the blood-pressure was produced by stimulating the peripheral end of the great splanchnic. The temperature rose as little in the paralysed as in the normal limb. The activity of the vascular wall therefore must be independent of the nerves passing to it from without. If the sciatic nerve of the paralysed side have been previously stimulated, the increase of the blood-pressure produced by stimulation of the splanchnic has a decided effect upon the temperature. It is therefore proved that : 1st. The blood-vessels, even after division of their nerves, offer great resistance for a long time to the dilating action of the blood-pressure when suddenly increased ; 2nd. This capacity for resistance is diminished by fatiguing influences ; 3rd. Vessels which are still in connection with the central organs are much more capable of developing this resistance, because they are less easily fatigued.

It is therefore probable that the peripheral end organs of the vaso-motor nerves exercise a regulating influence on the blood stream.

The inhibitory nerves of the cutaneous vessels may be set in action by reflex stimulation. Heidenhain has already shown that stimulation of the central end of a sensory nerve increases the temperature of the skin. Owsjanniskow has shown the same for the inhibitory fibres of the chorda tympani; and Goltz observed that the foot of the other side became normal on stimulating the central end of the sciatic

nerve of the other leg in a dog, whose spinal cord had been divided at the last dorsal vertebra. This dilatation of the vessels was here also undoubtedly reflex, as is shown by the author.

Stimulation by suspension of the respiration increases the temperature of the skin (Heidenhain); but blood-vessels whose nerves are divided are not so affected. If, however, the peripheral centra have been exhausted, the increase of pressure produced by suspension of the respiration causes dilatation, but not on vessels with active motor apparatus. The inhibitory nerves may also be excited by nicotin, and by psychical stimuli.

On the Course of the Vaso-motor Nerves from the Central Organs to the Sciatic Nerves.—The author confirms the opinion of Claude Bernard, that the vaso-motor nerves avoid the paths from which the sciatic nerve receives its motor and sensory fibres (sacral plexus) and rise higher up, reaching the sciatic through the sympathetic. Both the vaso-motor and the inhibitory nerves reach the sciatic through the abdominal sympathetic.

1. Section of the sacral roots and their stimulation have both no appreciable direct influence on the temperature of the hind feet.

2. Section of the sympathetic, on the contrary, at the level of the bifurcation of the aorta increases the temperature permanently.

3. Tetanic stimulation diminishes it.

4. Under favourable circumstances, rhythmical stimulation causes an increase.

5. Sensory stimulation, injection of nicotin, suspension of the respiration, produce an increase of temperature in the hind foot, even after section of the sacral roots; and this to the same extent as in the normal condition, but no longer after section of the abdominal sympathetic (as low down as possible) even when the sacral roots are intact.

The vaso-motor nerves supplied to the sympathetic are derived not only from the lumbar, but also from the dorsal region, though how far up the author has not tested.

W. STIRLING, D.Sc., M.D.

GOURAUD ON THE ACTION OF CLIMATES ON THE TREATMENT OF PULMONARY PHTHISIS.

In a second note on the action of different climates on the treatment of pulmonary phthisis (*L'Union Médicale*) Dr. H. Gouraud says :

If we merely desired to discover the places on the face of the earth where phthisis is absent or rare, the task would be comparatively simple. They are to be found from the stations of Southern France and of Italy, even to Norway, the Faroe Islands, and Iceland; from mild humid insular stations to the steppes of the Kirgoi with their eminently dry climate.

Norway, Iceland, and the Faroe Islands have cold humid climates, and yet appear to enjoy an immunity from phthisis. On the other hand, the cold and dry steppes are now much employed in combination with the use of koumiss. Patients are sent in forty hours by rail from St. Petersburg to Nijni-Novgorod, and from that place to Samara in the steppes, in twenty hours by steamer. There they stay from May 1 to October 1.

What greater contrast can there be, than that between the steppes of Russia, the south of France, and the climate of Madeira? Yet all are sought for

the same object. Granting that many of these places enjoy a considerable degree of immunity from phthisis, why does this immunity not extend to visitors? The answer is, because phthisis is not a product simply of climate. It is also a social disease. If there be any fact certain it is this, that the more people become crowded together, the more industries are developed, the more does phthisis show itself. Crowding in small rooms at home, too early labour, the inhaling of foul air or of deleterious particles in manufactories, a too sedentary life, are frequent causes of phthisis. The great centres of industry are the places which yield the highest mortality from it, as London, Manchester, Liverpool, Paris, Glasgow, New York, Philadelphia, New Orleans, Berlin, Munich, and Vienna. England has been called the home of industry and of phthisis.

We need not inquire here into the accidental and constitutional cause of phthisis; but we may say that, as climate is not the sole cause of phthisis, so climate alone will not produce immunity from it. Phthisis is produced in a great variety of climates, and consequently it is not to be always avoided by the mere selection of a climate.

In medicine climate is an adjuvant, not a specific. The absence of a particular malady from a place does not prove that the place is a prophylactic against that malady. A climate may have tonic and exciting properties which favour the nutrition and the good health of persons born in that climate, and employing a diet and mode of life suitable to it. Yet these same tonic and exciting qualities may not suit subjects already attacked by such and such maladies, and having irritable or vulnerable organs. These qualities favourable to the one class may be unfavourable to the other. The immunity of the natives of a place from any particular disease therefore only furnishes a reason for studying it in its climatic relations.

Immunity of itself affords no guarantee for patients; but if it is proved that there are fewer sick of a given malady, say at a certain elevation, this fact is so far favourable to altitude. If, further, it is verified by direct observation that patients in such or such stages of their complaints derive benefit from residing in the mountains, this is enough to recommend mountains, especially if they have already tried other climates without advantage.

It seems now to be generally admitted that the number of cases of phthisis diminishes as the elevation increases. How is this to be explained? We must in the first place allow that many of the factors of phthisis are absent at a certain elevation, that is, all of them that are connected with social life and aggregation; but besides this, what further explanation have we?

1. Hirsch says that it is because the alternations of temperature are less marked in the mountains than in the plains.

2. Brehmer says that the air is more tonic and favourable to nutrition.

3. Jourdanet says that the cause is the deficient supply of oxygen.

It is true that the relative proportions of oxygen (21), and of nitrogen (79), are the same in the mountains and in the plains, but as the higher layers of the air have less density, the quantity of oxygen in them for each inspiration is less. Experiments have shown that the quantity of oxygen in a litre of air at the height of 15,000 feet is about one-half what it is in the plains. The result of this is that, in order to get the

necessary supply of oxygen, the inspirations become deeper and more complete, and that the thoracic cavity increases in capacity. The pulmonary cells, dilated and enlarged, become to a certain degree emphysematous, and in the end produce the dyspnoea called *asthma montanum*.

Two pathological facts appear in the mountains, which stand in relation to each other, the rarity of pulmonary phthisis and the frequency of emphysema. It seems also probable that the increased expansion of the pulmonary cells leads to a certain degree of anæmia of the lungs, and this anæmia, like emphysema, is considered to be antagonistic to tuberculosis.

The diminution of atmospheric pressure causes a derivation from the centre to the circumference, and produces a real revulsion towards the cutaneous surface. Add to this the tonic action of the air and its influence in promoting appetite and digestion, and we see some explanation of the rarity of phthisis in mountain climates.

To these causes Lombard adds a certain excess of carbon in the system, consequent on the diminished supply of oxygen, and he thinks that this has something in common with the state induced in islanders (who enjoy immunity from phthisis) by the free use of oils and animal fats or butter.

To these influences Lombard adds the effects of hydro-therapeutic treatment and of muscular exercise at the mountain sanatoria, along with the use of wine and fruit and nutritious diet.

Besides other objections that may be raised to Lombard's views, it is difficult to suppose that this real or supposed anæmia is a prophylactic of phthisis in the mountains, when we so often in the plains see anæmia to be a prelude of tuberculosis.

In the place of Dr. Lombard's anæmia, Dr. Gouraud would prefer to assign more satisfactory reasons for the beneficial effects of mountain climates in phthisis.

The purity of the air of mountains consists practically in the absence of all organic particles; and when we consider the effect of vitiated air in crowded workshops in producing phthisis, we can understand the prophylactic effect of mountain air. The transparency of the air which is dependent on its greater dryness, and the more powerful action of light, depending upon the same cause, aid materially the operation of the purity of the air. The effect of residence in mountains on the dimensions of the chest is also worthy of careful consideration, and has been studied by M. Armieux, at Barèges, at a height of more than 3,000 feet. He ascertained that in the case of ninety-six soldiers who were sent up to Barèges there was, after four months residence there, a distinct increase in the measurement of the chest. If this result be fully established, it is evident that it will have a very important bearing on cases of threatened phthisis in the young, and that a mountain climate is to be considered as favourable to the development of the thoracic cavity, and consequently as improving the respiration.

We thus understand how mountain air may be useful in certain cases and in certain periods of phthisis. It acts by its purity, by its dryness and transparency, as well as by the diminution of atmospheric pressure. Dr. Gouraud observes that these principles have only, or nearly only, been applied in Switzerland, and thinks that mountain stations for such cases might very well be selected in some parts of France.

He concludes by observing that after all neither barometer nor thermometer, neither hygrometer nor anemometer, can determine what is the suitable climate for such and such a phthisical patient. All depends on the nature of his constitution, and on the way in which the various meteorological conditions affect him.

J. MACPHERSON, M.D.

BARKER ON UNUSUAL UTERINE HÆMORRHAGES.

The following remarks were made at a meeting of the New York Academy of Medicine by Dr. Fordyce Barker (*New York Medical Record*, January 29).

There is a class of cases in which uterine hæmorrhage occurs independently of any peculiar condition of the uterus itself. Certain conditions of the ovaries may give rise to an unusual discharge of blood from the uterine cavity.

Acute ovaritis is one of these conditions; and although very rare in the non-puerperal woman, yet under the influence of strong sexual excitement, or by some sudden shock, emotional or physical, the process of ovulation is arrested, acute ovaritis is excited, an increased fluxion of blood towards the uterus is developed, and profuse hæmorrhage may follow.

Ovarian dysmenorrhœa is another condition which is sometimes attended by profuse uterine hæmorrhage, although deficient menstrual discharge is more frequent. There is what has been termed the ovarian temperament, a condition in which the ovarian function is very active, fully completed, while the uterine function and development are correspondingly imperfect. This class of cases is characterised by the early appearance of menstruation, by an excitable nervous temperament, a tendency to hysteria; and when menstruation is to appear, the function will be preceded for two or three days, or even more, by languor, nausea, headache, pains in the breast, and frequently by severe pains in the region of the ovaries; and when at last the menstrual discharge appears, in a certain although not large percentage of cases it is apt to be excessive. These cases of ovarian dysmenorrhœa and menorrhagia are not very rare. In some instances great benefit is derived from the use of bromide of potassium, administered in free doses for a few days previously to the occurrence of menstruation; and to this may be added leeching at the commencement of the ovarian symptoms. Of course, the woman should maintain the most perfect quiet and rest in the recumbent posture during the entire time occupied by each menstrual epoch.

Sometimes the shock developed in this class of cases will be such as to require an entirely opposite course of treatment. Here again the plan to be pursued is determined by the general condition of the system; and if there is a depressed condition present, it must be met by the use of those agents well recognised as being proper and important in the treatment of shock and depression under any circumstances.

Both plethoric and anæmic conditions of the system are found associated with ovarian dysmenorrhœa and menorrhagia.

Acute ovarian displacements, such as a sudden prolapsus of an ovary from violent effort, or shock, or produced by constipation, may give rise to menorrhagia, as a result of the highly congested ovary. When this accident occurs it will be attended by

acute symptoms of displacement of the ovary; and the patient suffers greatly from the characteristic pains which attend this displacement, and the condition may be accompanied by menorrhagia extending over two or three menstrual periods. As a matter of course, the rational method of treatment under these circumstances is to overcome the displacement and the ovarian congestion.

There is another class of cases in which both menorrhagia and metrorrhagia occur, which are due to conditions of organs remote from the uterus, or constitutional causes, if you choose to call them such.

Profuse hæmorrhage from the uterus may result from obstructed portal circulation, obstructed circulation through the right cavities of the heart, and also from certain diseases of the kidneys.

Disturbed brain-action from emotional causes may be followed by violent uterine hæmorrhage. Such cases must have fallen under the clinical observation of most who have been long in practice, which are entirely unassociated with any evidence of local affections of the uterus.

Again, we have constitutional causes of uterine hæmorrhage, which may be regarded as toxic.

Malaria is not unfrequently the cause of menorrhagia, not always profuse, but the menstrual flow is prolonged unduly by the general impairment of the constitution and the defective nutrition of the blood-vessels of the uterus from the continued influence of malaria.

Menorrhagia may be caused by the toxic influence of various exanthemata. A most remarkable case of menorrhagia once came under my observation, and occurred in the person of a girl, aged eleven years, who was suffering from measles. The exhaustion present in that case was equal to anything I ever saw in the adult female, having profuse uterine hæmorrhage from any other cause. It was finally arrested, after a great variety of measures adopted had failed, by the introduction of an alum cone into the cervix. This is the only case I have ever seen in connection with measles.

I have seen four cases of this character occurring in patients sick with scarlet fever. It is also said to occur with typhoid fever, small-pox, yellow fever, etc.; but associated with these latter, menorrhagia has never fallen under my observation.

There is another class of cases in which excessive uterine hæmorrhage occurs, dependent upon a constitutional cause somewhat peculiar. Perhaps I am wrong in classing these cases under a constitutional head; but the class of cases to which I refer may be described as follows. A woman who has been free from any uterine disease, perhaps has borne one or two children, suddenly begins to grow stout, and exhibits a remarkable tendency to obesity; so that from being a thin, spare woman, she increases in weight from fifteen to fifty pounds, or even more, and with this remarkable tendency to obesity there is in some cases a rapid diminution in the amount of blood lost at each menstrual period.

But there are other cases belonging to the same class, where, instead of diminution in the menstrual discharge, this tendency to obesity is accompanied by an excessive uterine hæmorrhage. These are troublesome cases, for the reason that you will suspect, from the severity of the flow, some serious uterine lesion; but when you come to make the most careful examination, you will be rewarded by a failure to detect any condition which will satisfactorily ex-

plain the occurrence of the hæmorrhage. The only thing which does explain the hæmorrhage in these cases, is the increased size and consequent plethora of the uterus.

I think that cases of this class are not very rare. I have repeatedly examined the internal surface of the uterus, after dilating the cervix with compressed sponge, in these cases, feeling certain that I should find some uterine disease which would account for the profuse flow, but have been disappointed in the same number of cases by finding it entirely free from any lesion or disease appreciable or discoverable by the most careful examination. The appearance of these patients is usually healthy, and the countenance is commonly flushed, but at the same time they are anæmic. The blood is impoverished, and the patient has a flushed face simply because the capillaries upon the surface, which are not large enough to allow blood of a normal character to pass through them, now carry red anæmic blood, and the slightest emotion or exercise causes them to be surcharged and the face to become flushed. They are cases of anæmia, and when placed upon the use of tonics, quinine, iron, chlorate of potassa, etc., instead of becoming stouter and increasing in weight, they will diminish in size and weight, while the patient is greatly improved in health and strength. It has seemed to me also that there are certain moral phenomena peculiar to this class of cases, for these patients almost invariably believe that they are suffering from some disease of the heart. They are especially liable to attacks of palpitation, and a very frequent complaint will be, that they have awoke in the night and found that the heart has stopped beating.

The plan of treatment which I adopt for these cases is first to administer the acetate of ammonia and saline cathartics, for the purpose of depleting the blood of its excess of watery elements. Next, I use chlorate of potash as an agent of very great value, on account of the influence it has in changing the condition of the blood; and then come the preparations of iron.

In immediate association with this class of cases comes another form of menorrhagia, namely, chlorotic menorrhagia. We may have chlorotic menorrhagia as well as chlorotic amenorrhœa, although it is not of such frequent occurrence. These cases, however, are sufficiently frequent to be met with by any man with an ordinary amount of practice.

Another class of cases, with which every practitioner must constantly come into contact, is menorrhagia associated with the climacteric period. These form a class of troublesome cases. For some reason the menstrual function becomes more active than natural, and is sometimes prolonged as to duration, and abnormal as to frequency of recurrence. Many of these cases occur in women who, at the period of the menopause, have a tendency to become much more corpulent than in former life, and in some such the menorrhagia may be conservative in relieving dangerous plethora, but it is by no means confined to this class. It is also seen in the thin and spare. When it occurs, it usually excites great apprehension in the mind of the patient, for, with a great majority of women, the belief is strong that the time of the menopause is the time of all others most favourable for the development of malignant disease of the uterus, which will destroy their lives.

And it is only natural that we should expect to find some uterine lesion present, when we take into

consideration the changes which this organ has undergone during a series of years. The mucous membrane has been constantly undergoing change, sometimes in the full development of the decidua of pregnancy, and certainly in the formation of the menstrual decidua. It is not surprising, then, that at this period a recurring physiological congestion should in some cases become a chronic engorgement, and arrest the incessant metamorphosis of the internal surface of the organ, which has been going on for thirty years or more, and thus result in some lesion of this surface.

In closing, I will briefly refer to the plan of treatment which I adopt in this class of cases. Where the uterus is found to be increased in size and weight, I direct the patient to use, for a week previous to the return of the expected period, suppositories made after the following formula:

R. Extract of ergot (Squibb's) . . . ʒij
Cacao butter 3j

Divide into 12 suppositories.

One of these suppositories is to be introduced into the rectum, morning, noon, and night: and I always give positive directions that they shall be carried far up into the bowel, and the patient must keep the recumbent posture for at least one hour. These are to be continued for a week previous to menstruation, and also throughout its duration. I prefer to use ergot in this manner, rather than by the hypodermic syringe, for the reason that the remedy is easily handled by the patient or nurse, and you avoid the risk of troublesome abscesses in the tegumentary walls of the abdomen, which in my hands have frequently followed the use of the ergot by the hypodermic syringe.

If the hæmorrhage be prolonged, although not excessive, I infer that there is some lesion affecting the lining membrane of the uterus. I then have resorted to another plan of treatment, which, since I commenced it, I have rarely found necessary to repeat in any case beyond the second menstrual return. I introduce into the cavity of the uterus cylinders of iodoform, made according to the following formula:

R. Iodoform ʒijss
Gum tragacanth gr. xv
Mucilage [. q. s.

Divide into ten cylinders, each one and one-half inches in length. One of these cylinders is to be carried completely into the cavity of the uterus, and a pledget of cotton introduced against the cervix to retain it in position. Introduce one of these cylinders daily for five or six days previous to menstruation. The only objection to them, is the excessively disagreeable odour which attends their use. I have frequently heard patients complain of a most disgusting taste in the mouth, in less than two minutes after one of these cylinders had been introduced into the cavity of the uterus. But to me, the results which have followed their use have been most satisfactory. These cases of climacteric hæmorrhage are quite common, and are often found very troublesome to the practitioner. By the use of the suppositories of Squibb's aqueous extract of ergot, the chronic engorgement of the uterus may generally be effectually overcome. If the menorrhagia still persist, we have good reason for suspecting lesion of the internal surface of the uterus, which, I think, is cicatrised by the cylinders of iodoform. I have formerly used for this purpose sulphate of zinc, introduced into the cavity of the uterus, and in some

cases of profuse hæmorrhage the solution of the persulphate of iron; but, in all those cases in which the cylinders of iodoform have been used for some days previous to the appearance of the flow, there has been subsequently no hæmorrhage of sufficient importance to make the solution of the persulphate necessary.

I have sometimes found it necessary to use the suppositories at each recurring period for several months, as the tendency to engorgement of the uterus is very difficult to overcome at the period of the menopause.

MITCHELL ON NEUROTOMY.*

Dr. Weir Mitchell, impressed with the idea that nerves in man repair damages, and reproduce excised portions to a far greater extent than has been imagined possible, has collected one hundred and twenty cases of nerve sections and excisions for the relief of neuralgia or chorea. The immediate result was total relief in ninety-six cases. As, in eight of these ninety-six cases, pain returned within a period too short to have permitted of nerve-repair, Dr. Mitchell speculates that the cause of relief may sometimes lie in some alteration which the shock of an operation effects in the sensorium. In support of this theory, he cites a case in which pain in the median was removed by section of the musculo-spiral nerve, and alludes to well-known instances in which the extraction of a tooth has dissipated supra-orbital neuralgia. Twenty-five out of the ninety-six cases remained well at the end of a year, but in five of these a relapse occurred within two years; twenty-six cases experienced a return of neuralgia within periods varying from one month to eighteen. As to the rest of the cases, the reports are incomplete.

Viewing the cases in which nerve-section failed to give permanent relief in the light cast upon them by three carefully observed cases of which Dr. Mitchell gives the details, it seems no longer doubtful that the failure has been due to regeneration of the cut nerve. Repair of a nerve may take place in six months; in one case it took place in a few weeks. The test of repair is not the return of feeling in the isolated parts, for that may be re-established in some way not understood by terminal or current anastomoses, but the recovery of power over the palsied muscles. To ensure permanent relief in all nerve-divisions, as much as possible of the nerve should be taken away, and the distal end should be doubled back on itself and secured in that position, or buried in the body of an adjoining muscle.

CASE I.—In November, 1871, Dr. Sapolini cut down on the musculo-spiral nerve in Miss S.'s arm, and removed one inch of it. The section caused atrophy of the extensor muscles in the forearm, entire loss of power to extend the wrist and fingers, but only slight loss of sensation in the hand. Within six months of the section, there were enlargement of the wasted extensors and some return of power to the wrist and fingers. During 1873 and 1874, the whole of the function in the extensor group in the forearm returned, only extension could not be kept up as long as in the left limb. As pain returned in

the line of incision, in the radial region and back of the hand, accompanied by false phlegmon there, and as Miss S. became addicted to narcotics, a fresh incision was made in the line of Dr. Sapolini's former one, and the nerve, which was found perfectly re-united, was again cut, three inches of it being removed. The nerve was of normal appearance, except that two enlargements or buttons of neuro-fibrous tissue, one inch apart, marked the site of the two ends of the divided nerve. Of these, the upper was the larger. The result of the operation was the complete relief of pain. This case is believed to be the first in which a nerve once cut, has, after repair, been cut a second time, so as to remove the restored portion. Repair must have begun in a few months, as within six months there was available neural connection between the two nerve-ends, and partial repair of the wasted muscles. The most interesting point in the case, is the evidence which it affords that we know as yet little about the surface-distribution of nerves. Arloing and Tripier have shown that in dogs any single nerve left uncut will leave the whole paw more or less sensitive. In this case the median nerve had been cut, and the musculo-spiral, and there only remained for the supply of the hand the internal cutaneous, musculo-cutaneous, and ulnar. Feeling, which by all old rules ought to have been annihilated in some districts of the hand, was nowhere absent. There was only some slight loss of sensation extending over the whole of the right hand—not quite as marked, however, in the ulnar distribution as elsewhere.

CASE II.—In April, 1874, one inch of the digital branch of the ulnar nerve on the fourth finger of the left hand of Mrs. M.— was excised for the relief of intense and intractable pain that had lasted for about thirteen years. Temporary relief followed, but the pain was worse than ever in eighteen months. Another operation was performed in November, 1875, when the formerly divided nerve was found re-united, with a bulb on the proximal portion and the other extremity, closely incorporated with the scar of the former operation.

CASE III.—On December 5, 1874, two inches of the radial nerve on the back of the forearm were removed from a patient fifteen years old, on account of persistent pain in the back of the hand, with great redness and swelling. In six weeks, the pain and a few weeks later, tactile sensation returned. On October 20, the operation was repeated, and the nerve was found reunited, with distinct bulbs of reformation. The distance between the bulbs was one inch and a quarter. The central bulb was the larger, and the peripheral one was constricted in its centre and had a figure-of-8 appearance. At the second operation, three inches of the nerve were cut out, and the distal extremity was turned back, so as to form a loop. There was loss of sensibility over a small area on the dorsal aspect between the thumb and forefinger, and some dullness of sensibility for a short distance around this area and on to the first phalanx of the finger and thumb. In a couple of months the region of lost and lessened sensibility had become hyperæsthetic, or perhaps, more properly, hyperalgesic, and on January 20, 1875, there was in the whole region on which sensibility was at first abolished or dulled, feeling either to the needle or touch; all contact being felt as unpleasant tingling, and touch as pain and touch.

The microscopic examination of the portions of excised nerve, in these three cases by Dr. Bertolet,

* Neurotomy. By S. Weir Mitchell, M.D., of Philadelphia, with an Examination of the Regenerated Nerves, and Notes upon Neural Repair. By B. M. Bertolet, M.D., Pathologist to the Philadelphia Hospital. *The American Journal of the Medical Sciences*, April, 1876.

showed the central enlargement to consist entirely of doubled contoured fibres which interlaced and crossed one another in every direction. The primitive fibres were not arranged in regular nerve bundles, but were more or less widely separated by connective tissue, which was most abundant towards the outer margins where the perineurium was slightly hypertrophied. The nerve-fibres in these nodules differed in no respect from those of a healthy nerve-trunk except in their irregular interlacings, but the nuclei of the nerve-sheaths were at not a few points more numerous than usual. The peripheral enlargements presented the same histological features as the central ones, but the primitive nerve-fibres were oftener arranged in parallel rows. Sections of the intermediate nerve between the neuromatous swellings were indistinguishable from perfectly normal nerve. The similar growths found upon nerve-stumps after amputation differ from these neuromata, in the far greater predominance in them of proliferation of connective tissue. In these neuromata, the still evident traces of increase by segmentation in the nuclei of the neurilemma, leave little doubt that these nuclei are the principal factors in the reproduction of divided nerves.

Dr. Bertolet has watched the histological changes in the sciatic nerves of kittens which he has experimentally divided. He has seen: 1. Swelling, greyish red or yellowish in colour of the divided nerve ends, owing to thrombosis of nerve-vessels and saturation of the primitive fibres with serum; 2. Coagulation of myeline, which breaks up into concentrically laminated fragments, fat-globules and granular masses of detritus; 3. Distension of the primitive sheaths and disappearance of the axis-cylinder; 4. Extension of these changes for a short distance along the centrally attached nerve and throughout the peripheral nerve to its ultimate branches; 5. Proliferation of the nuclei of the neurilemma in the central swelling and throughout the peripheral end of the nerve; 6. Elongation of the increased nuclei into spindles and disappearance of the medullary substance; 7. Protrusion from these spindle-shaped nuclei of long filamentous protoplasmic processes, which unite with one another and widen into narrow bands; 8. Appearance round these single contoured fibres of a second sharply defined glittering contour, and blending of these fibres into continuous medullary-sheaths, and disappearance of a large proportion of the proliferated nuclei; 10. Filling out of the nerve-sheaths with medullary substance around the axis-cylinders.

ROGER ON PUNCTURE OF THE PERICARDIUM.

In a paper communicated to the Académie de Médecine by M. Henri Roger (*Bulletin de L'Académie*, no. 44, 1875) the author commences by dwelling upon the difficulties in the diagnosis of pericardial effusions, and he quotes in illustration two cases operated upon by Vigla and Trousseau, in one of which a thin-walled dilated heart was mistaken for an effusion into the pericardium; in the other case an hypertrophied heart surrounded by membrane floating in only a small quantity of serosity was found *post mortem*. M. Roger fully endorses the opinion of Trousseau as to the difficulty of feeling sure of the existence of great pericardial effusion even in the presence of most of the usual signs, and as to the

necessity therefore of caution in proceeding to operate. Besides the chief indication for paracentesis furnished by the quantity of the pericardial effusion, there are other indications, for or against, which depend upon the nature of the fluid and the causes of its effusion. Is the operation of paracentesis applicable to cases of active or acute hydropericardium? Such cases, M. Roger observes, scarcely supervene save in Bright's disease, either primary or secondary to scarlatina. The serum effused is very thin and readily absorbed, neither the heart nor pericardium being altered in texture. The danger to the patient in such cases does not so much proceed from the fluid in the pericardium, which is indeed rarely excessive, as from the associated dropsy of the lungs and pleura. Paracentesis, under such circumstances, is therefore not to be recommended.

It is more especially in the large effusions of pericarditis that the propriety of surgical interference comes under consideration. But it is necessary to discriminate between the effusion of acute and of chronic inflammation. When acute pericarditis terminates fatally, death is much less the result of the effusion than of the associated structural alteration of the heart from endocarditis and myocarditis, as well as from other complications, rheumatism, pleurisy, etc. Pericardial effusions differ from those of pleurisy, in the greater abundance of the false membranes which sheath the visceral and parietal layers of the pericardium with thick irregularly projecting surfaces, and form partial adhesions imprisoning the effused liquid, and opposing any further collection. Then the cavity of the pericardium becomes closed by complete adhesion; and the heart remaining big, or becoming hypertrophied, there results a complex lesion which gives rise to most of the physical signs and functional symptoms of great pericardial effusion. Hence, in this cardiac symphysis, we have still another cause of error of diagnosis, and of danger in operating.

In certain cases, however, effusion rapidly takes place, preventing the formation of adhesions; and the absorption of such inflammatory effusions is less easy than of dropsical accumulations. The primary and secondary consequences of such vast collections in the pericardium are, in the acute stage, the most grave disorders of the circulation and respiration, threatening speedy death. And even if the constitutional resistance permit the disease to become chronic, the fatal issue, although retarded, will not the less surely occur, secondary lesions becoming developed and giving rise to defective blood-changes and slow asphyxia.

Under these critical circumstances, if we be sure of the presence of extensive effusion and of the absence of pleuro-pulmonary complications, paracentesis ought to be attempted to relieve the compression of the heart and neighbouring organs. Even if the fluid be most successfully evacuated, however, one must remember that the peril, although postponed and lessened, is not altogether removed; pericardial adhesion and its later consequences almost necessarily ensuing. M. Roger gives a case to illustrate that, on the other hand, an effusion apparently of the gravest kind may, under treatment by counterirritants and diuretics, recover. Thus the position of the surgeon is in these cases of acute pericarditis, an embarrassing one; there is the doubt on the one hand whether a cure will not take place by the efforts of nature unaided,

and on the other hand he feels that the operation will avert a pressing danger.

Cases of simple chronic pericarditis attended with great effusion are rare. Most commonly they are tubercular, as shown by the *post mortem* observations of MM. Chairou, Baizeau, and Trouseau. Two out of three cases of infants in which M. Roger operated proved to be tubercular. The disposition to interfere by operation is much lessened in cases in which the effusion is evidently of tuberculous origin.

Unlike pleuritis, pericardial inflammation rarely, in the first instance, gives rise to purulent effusion, and such an effusion consequent upon pyæmia or allied conditions does not call for surgical interference.

In sanguineous effusions into the pericardium, hæmorrhagic pericarditis, and sero-hæmorrhagic effusions secondary to mediastinal cancer, all of rare occurrence, an operation is contraindicated.

Paracentesis of the pericardium is a far more delicate operation than puncture of the chest-cavity. The mammary artery coursing along four or five millimètres from the margin of the sternum, the diaphragm, the left lobe of the liver, sometimes much enlarged, the lung and pleura, and, finally and most importantly, the heart itself, have to be avoided by the surgeon. M. Roger quotes two cases, one of M. Baizeau's, and one of his own, in which the right ventricle was apparently punctured in operations designed for the relief of effusion into the pericardium, and 100 to 220 grammes of venous blood removed respectively. Both cases survived the operation. Another disagreeable occurrence which may happen even if the right place be chosen, is for the puncture to be followed by no escape of fluid. The pericardium being only in lax connection with the wall of the chest, and much thicker and harder than the pleura, readily recedes before the trocar. With the fine needle of the modern aspirator, however, this difficulty is less likely to happen. The puncture should always be made directly from before backwards with a slight subsequent inclination of the point of the needle downward, as advised by Dieulafoy, in order to avoid the ventricle during systole. The fifth intercostal space at a point intermediate between the sternum and the nipple, but rather nearer the latter, is the place to be, as a rule, chosen for puncture. But the heart's apex, instead of, as is usual in such cases, impinging against the fourth space or fifth rib, may be lowered by dilatation, or drawn downwards by an adhesion to the diaphragm, when a lower point must be chosen for the puncture. The region within which the surgeon must operate in order to respect all important organs being very limited, it is evident that the smaller the trocar the better the chance of terminating the operation happily; hence the capillary instruments are much preferable to the trocar, even of small calibre, employed until recent times for paracentesis of the pericardium.

In conclusion, M. Roger gives some discouraging statistics as regards the curative value of the operation. Of fourteen cases collected by him, he finds that in six death has followed so closely as to be attributable to, or at least hastened by, the operation; three cases have appeared to have succumbed to the disease in from six weeks to six months after the operation. In three cases an incomplete cure was effected, the patients dying subsequently of organic heart-disease or tuberculosis. One case 'recovered' but remained a valetudinarian. And in one case only was a 'true cure' effected. M. Roger concludes, therefore, that notwithstanding undoubted improve-

ments in the modern operation, it remains a dangerous and doubtful remedy to be hazarded in extreme cases.

R. DOUGLAS POWELL, M.D.

HARRIS ON THE TREATMENT OF INEBRIATES.

Dr. Robert P. Harris, who, as attending physician to the Franklin Reformatory Home at Philadelphia, has had more than five hundred confirmed drunkards under his professional care, gives the results of his experience in the medical and dietetic treatment of inebriates in a paper published in the April number of the *American Journal of the Medical Sciences*. He begins by stating that there is no danger to the inebriate in suddenly cutting off his customary stimulus, and that, of the two systems, the *sudden stoppage* is in all respects preferable to the *tapering off*. Of the patients who have passed under his observation, the majority have drunk whisky, some having taken as much as a gallon of this a day for a short period, and a few strong subjects as much as a quart a day for a year or more. The average daily allowance, however, of whisky, has been a pint and a half per man. The habit of whisky-drinking is only interrupted in such inebriates by disorder of the stomach amounting to absolute inability to retain fluids, or by exhausting diarrhœa, hæmorrhage from the rectum, or epileptic convulsions. When submitted to medical observation, they are weak, nervous, inclined to emesis, and considerably reduced in flesh. It is in these cases, in which appetite has been long impaired or lost, and in which vomiting has been early and excessive, that maniacal excitement is most likely to ensue. When with maniacal excitement there are an asthenic type and a scarcely perceptible pulse, coma and death are to be feared. In the management of cases in which there are failure of appetite and vomiting, much benefit accrues from the use of a few spoonfuls of iced milk and lime-water given every fifteen minutes for two hours. If this fail, then a mustard plaster should be applied over the abdomen; the next resort being to opium, or bromide of potassium in combination with bicarbonate of soda. As soon as the stomach will bear it, beef-tea or chicken-water should be given, and that should be followed by eggs, toast, and mutton-chops. Bromide of potassium, or still better bromide of sodium, which is fifty per cent. more soluble, and entirely free from pungency, is next to be employed as a sedative and soporific, especially where there is danger of *mania à potu*. It is not only a wonderful hypnotic, but relieves the irritability of the stomach, diminishing its hyperæmic condition, and in some subjects removing all craving for alcoholic stimulants. Where the salts of bromine fail as hypnotics, morphia may be added to them. Tannin or acetate of lead will arrest diarrhœa. The great object of treatment is to make an impression in the shortest possible time, so that food may be taken.

Two things are to be especially avoided in the treatment of inebriates—tobacco and water. The former conduces to mania, the latter distends the hyperæsthetic or inflamed stomach, and prevents food from being taken. Hyperæsthesia, marked by tenderness of the stomach on the introduction of food, sometimes continues for days.

Hæmorrhage from the bowels, which is almost invariably from the rectum, may be stopped by in-

jections of solutions of ten grains of persulphate of iron after each evacuation.

The convulsions of drunkards, which occur in about 15 per cent. of inebriates, are, Dr. Harris believes, reflex in character, springing from the state of the alimentary canal, and are best treated by elimination of alcohol and by the bromides.

The mania of drunkards, if not prevented, may, Dr. Harris asserts, be cured in from two to four days by bromide of potassium, sulphate of morphia, or chloral hydrate with substantial diet and beef-tea.

Secrecy in prescription is advocated, so that the patients may not take to the habitual use of the drugs employed. Many drunkards indulge largely in tincture of valerian, bromide of potassium, chloral, and Hoffmann's anodyne, and these are sometimes believed to be antidotes to whisky. Dr. Harris has ceased to use all medicinal tinctures, hop-tea, wormwood, capsicum, and highly seasoned soups in the treatment of inebriates. These, he says, keep alive a desire for drink. He discountenances also pepper, spices, and horseradish. With an American partiality for restraint, Dr. Harris recommends that, when there is much restlessness in *mania à potu*, the patient should be fastened with wrist and ankle straps, with a view to induce sleep.

Convalescent inebriates have marvellous appetites, and rapidly gain flesh. This circumstance, taken in connection with the fact that they lose weight whenever they resume their intemperate habits, is seemingly regarded by Dr. Harris as proof that alcohol is not a food. Renal disorders are common in inebriates, but are seldom serious or persistent, and yield readily to treatment.

J. CRICHTON BROWNE, M.D.

HARDY ON CIRCUMSCRIBED PACHYMENINGITIS AND MENIÈRE'S DISEASE.*

In a lecture delivered recently at the Necker Hospital, Paris, Professor Hardy made the following remarks. I wish to-day, gentlemen, to bring under your notice an individual who is affected with a most singular, but at the same time very interesting disease. Here, in a few words, is his history. Some months since he noticed in both ears, but more particularly in the left, very pronounced deafness, at the same time that he experienced some pain in the head, near the left ear, which was itself on different occasions the seat of a discharge. The patient, who was a baker, was nevertheless able to devote himself to his business, until about a month since, when after having suffered for some days from an increase of pain in the ear, he was suddenly seized with vertigo, following which he had a fall so violent as to cause a contusion with excoriation in the temporal region. This dizziness lasted some minutes; the patient is unable to speak precisely as to its duration. He then felt a slight giddiness, but he remembers perfectly how and where he fell. When he came to himself, he was in bed and sleeping. The next day the dizziness still remained, as well as the pains; and this state of things continuing for several days, the man decided to come into hospital.

We found at once in him all the symptoms of an affection of the ear; the external auditory meatus was the seat of a sero-purulent discharge. On a careful examination of the tympanum we found that the membrane was slightly altered, that it had not

its normal translucency, and that it presented well marked injection indicating the existence of inflammation, in fact of myringitis. The membrane at the same time appeared perfectly free from any perforation, but for some days the external ear was the seat of a discharge which assumed the form of scabs.

Synchronous with these signs of inflammation we observed the symptom which the man complained of before his admission, viz., pain in the left side of the head, occupying nearly all the posterior and superior part of the cranium, that is to say, the periauricular region; and at the same time a peculiar dullness, a drowsiness, portraying itself by a peculiar aspect of the face, which was just that of a man stupefied; the patient remained constantly in the sitting posture, scarcely listening and not appearing to comprehend what was said to him.

More than this, when he went to and fro it seemed to him that objects turned round; he experienced a feeling of vertigo, of whirling.

Under the influence of treatment, or merely by the progress of the disease, the state of this patient gradually improved. At the present time there is no discharge from the ear; he is always deaf, but his sufferings are much lessened, and the giddiness has disappeared. He even walks about, without that continual fear of falling which he formerly experienced. More than this, the stupefied aspect of the face is slightly diminished, and examination of the ear reveals nothing particular.

What, then, was this disease? With respect to diagnosis of the affection present in the ear, we say that evidently it offered signs of an external and an internal otitis. The buzzings, the deafness, prove this positively. But these lesions fail to explain the diverse phenomena which this patient presented, and everything tends to make us believe that in him we had an extension of the disease of the ear to the adjoining parts, to the brain. If the absence of paralysis and of involuntary movements permits us to conclude the integrity of the brain itself, on the other hand, the dullness of intelligence, the vertigo, the stupefied aspect of the patient, are so many signs of cerebral compression. And here the symptoms ought evidently to make us think of inflammation of the dura mater, of circumscribed pachymeningitis, an affection characterised, as you know, by a thickening of the serous membrane, and by a deposit of false membrane on its internal surface, lesions which soon cause compression of the brain, which shows itself by symptoms analogous to those which this patient presented.

Having its seat in the first place in the petrous bone in the condition of osteitis, the inflammation is propagated thence to the membrane which covers the bone, and there is here produced a phenomenon absolutely identical with that which is observed in individuals, subjects of Pott's disease, where one often sees with the displacement of the bone, pain, abscesses, and frequently phenomena of paralysis consequent on compression of the medulla. And it may be noted here that this compression is not produced by the bone, but that it is the result of the propagation of the inflammation to the dura mater which covers them; in a word, of a pachymeningitis which oftentimes accompanies true myelitis, thus explaining the phenomena of paralysis of the lower limbs which is seen in Pott's disease.

But this patient exhibits a special phenomenon which has been rarely observed. I speak of the loss

* *Paris Médical*, April 13, 1876.

of consciousness which, in my opinion, marked the commencement of the actual disease, the pachymeningitis.

In fact, in presence of the sudden vertigo with which this man was seized, ought we not to ask whether we have not in him a case of that singular special disease which is known by the name of *Menière's disease*? In answer to this question I must give you, in a few words, the history of this disease.

It was in 1863 that this disease was first pointed out by Itard, physician to the Deaf and Dumb Institution. He reported the case of a patient who was seized suddenly with vertigo, which came upon him like a shock. This fact passed unperceived when, in 1861, *Menière*, also physician to the Deaf and Dumb Institution, read before the Academy of Medicine a dozen cases of vertigo supervening in individuals afflicted with deafness, and characterised by manifest loss of consciousness, vertigo causing the fall of the patient.

Since *Menière's* work, other similar observations have been undertaken, especially by M. Charcot.

This disease presents peculiar phenomena to which I can easily call your attention. The first point which strikes us is, that the individuals who suffer from this disease are always the subjects of previous deafness, which dates back to a greater or less time, to some months or often longer. Besides this, before the special attack which characterises this disease manifests itself, the patients generally experience tinnitus and buzzings in the ears, sometimes cephalalgia. In some persons these phenomena undergo a certain amount of recrudescence before this attack; then supervenes the dominant phenomenon constituted by the vertigo, that is to say, a sensation of whirling. Not only does it appear to the patients that they themselves are turning round, but even the objects before their eyes seem to be carried away in a similar manner. With this sensation of turning there generally supervenes another phenomenon much more serious, a falling of the body, which is ordinarily forwards, sometimes backwards, or to the right or left. Suddenly these persons are seized with an irresistible impulse which throws them forwards, and makes them fall sometimes with great violence. There are various degrees of intensity of this phenomenon. Sometimes the patients experience only a sensation of falling; the fall does not actually occur. If they be lying down, the bed seems to them to turn over, sometimes from left to right or from right to left, sometimes from before backwards, or from behind forwards. At other times, on the contrary, there is a real fall, of a more or less violent character. Sometimes the individuals affected with this singular disease simply allow themselves to fall into a seat, into an arm-chair, or softly on to the ground; sometimes they fall with such violence that serious wounds result. One patient whom I saw had received in this manner a very large wound of the forehead; another, seen by M. Charcot, had sustained a fracture of the nasal bones.

At other times, instead of this sensation of whirling and the fall, it seems to the patients as if the earth opened and they were precipitated into a gulf.

Whichever may occur of these particular phenomena, there is frequently produced a loss of consciousness which most generally is of short duration. It does not come on instantaneously, but super-

venes little by little. The patients feel that they are losing consciousness. In fact, this phenomenon shows the peculiarity that, when they come to themselves again, they recollect perfectly the circumstances under which the attack occurred. There is none of that incontinence of urine or of fæces which characterises some attacks of loss of consciousness. More often than not, however, there is nothing of this sort. There is vertigo, and there is the fall, but the patient is able to give a perfect account of all that has happened. Or even if the loss of consciousness do occur, it is of very short duration, and even allows the patients to continue to do something while it exists. Besides this, other curious phenomena are observed; for instance, we see in some cases vomiting supervening after the attack. In the case of one patient under my care, every attack of vertigo was followed by a vomiting of a peculiar character, inasmuch as it was not preceded by nausea, and it was simply due to the action of the brain on the stomach. Finally, after these attacks there sometimes remain headaches, malaise, and especially buzzings in the ears, which last for some hours.

The attacks of loss of consciousness and of vertigo generally recur with more or less regularity. Some patients often have daily attacks, others every eight days; some, however, only have two or three attacks a year. In a word, the recurrence of the attacks is extremely variable. Nevertheless, this we can say, that there are generally many attacks, and that the disease lasts many months, sometimes even many years.

This is certain, that the disease may be cured, and that it causes during its continuance an increase of deafness, which, according to M. Charcot, may even become complete, and may remain in that state after the cure. However that may be, I have treated a patient, whom I have reason now to consider cured, since for ten years she has not had a single attack, in whom deafness, which depended on a very trifling obstruction of the ear, increased during the disease, and then returned after the cure to its former condition.

In these patients, in cases where a necropsy has been able to be made, alterations have been found in the semicircular canals of the labyrinth, these alterations consisting either in an effusion of blood pure or mixed with pus, or simply in a certain amount of redness in the membrane which lines these canals. Whatever it may be, it is evident that these lesions of the semicircular canals react upon the brain, and are the cause of the troubles from which individuals afflicted with *Menière's* disease suffer.

The relation which exists between these lesions of the internal ear and the symptoms I have mentioned, has been confirmed by experimental researches made on animals by certain physiologists. Flourens and Vulpian have shown that these lesions cause in animals phenomena of rotation and of propulsion forward, similar to those which are produced by destroying the peduncle of the cerebellum.

I conceive that in deaf people, in whom the internal or the auditory nerve is altered, the disease is propagated towards the semicircular canals, and that thence are manifested the attacks which we have just noticed. But even here, as in numerous cerebral affections, there is still something obscure, unknown in the pathological anatomy, and we are unable to give any reason for the intermittence of the attacks. I could cite many cases of *Menière's* disease to you, but

I will confine myself to the relation of the following.

I have under my care in the City a lady who, three years ago, while walking in her garden, during a storm, was suddenly seized with a falling of the body forwards. It seemed to her that there was before her a gulf into which she was precipitated. She did not lose consciousness; she remained a moment on the ground, and then raised herself up. The same accident had happened to her twice before, ten years previously. Following this attack she had similar ones, always recurring in the same manner. Once the propulsion forward was so violent that, as the result of the fall, she received a severe wound on the forehead. Under the influence of treatment or of the evolution of the malady, instead of an actual fall or stroke, this lady began to feel merely a sensation which she herself regarded as so slight that, if it happened when she was talking, the conversation was not interrupted. At the present time, buzzings in the ears returning at the menstrual periods, with heaviness in the head, are all that remain of the affection. In this lady, during the illness, the deafness with which she was affected increased considerably; but after the cure it returned to its former state. In her case the administration of bromide of potassium, in three grain doses, caused no amelioration; moreover, it gave rise to a rubeloid cutaneous eruption, which I have never seen one like before. I then took to having her bled once a week for a month, then every fortnight, then every six weeks, and lastly every six months. For two years, the attacks have not reappeared.

Some days since I was consulted by a patient who, about ten months before, was seized with vertigo, followed by a fall. Quite recently, while shaving, the same accident again happened, leaving him scarcely time to throw down his razor and fall into an easy chair. Two days later, while in bed, he experienced the same symptoms; it seemed to him that his bed turned over and he was about to fall. He never lost consciousness. The physicians whom he consulted diagnosed vertigo *a stomacho laeso*, and prescribed quassia, alkalies, and bitters. The attacks continuing, the patient came to me. Suspecting Menière's disease I questioned him, and he told me that for two years past he had heard only with one ear. I did not hesitate then to make my diagnosis; he suffered evidently from vertigo *ab aure laesa*, and not from vertigo *a stomacho laeso*. I bring the question back now to its point of departure, and ask if our patient has been suffering from this Menière's disease. I think not. We have only in support of this opinion the conditions of the fall; here, I think, the attack has simply marked the commencement of a pachymeningitis.

The prognosis of his affection is little serious; little by little the health of the patient will be re-established, and though for some time the buzzing in the ears will remain, he will be able to attend to his occupations. As to the treatment which we have followed, it has consisted in the administration of repeated purgatives, the application of cupping-glasses, and blisters to the nucha. Thanks to these measures, we have been able to obtain a very great amelioration of the symptoms.

W. DOUGLAS HEMMING.

PROFESSOR SCHIFF, the distinguished physiologist of Florence, has been appointed professor of physiology in the new medical department of the University of Geneva.

ANATOMY AND PHYSIOLOGY.

PERRETTI ON THE TOXICOLOGY OF CAFFEIN.—Binz observed some time ago that the temperature of the body was considerably increased after large doses of caffein. J. Perretti (*Dissertation*, Bonn, 1875, and *Centralblatt für die Medicinischen Wissenschaften*, no. 52, 1875), has made numerous experiments on dogs, cats, and rabbits, and found that there was an increase of temperature of 1.4° Cent. (2.52° Fahr.) after the subcutaneous injection of half a gramme of caffein in a dog weighing 2,700 grammes (about 6 lbs.) The effect does not last long, like all the other phenomena produced by the drug. During the increase the animal is in a state of general muscular tension, and it appears to the author highly probable that a direct excitation of the spinal cord and the increased innervation of the motor apparatus dependent thereon causes the great production of heat. The pulse is simultaneously much increased, the salivary glands secrete profusely, and the sensorium is obviously excited. The respiration is rapid, and is paralysed by fatal doses. That artificial respiration can avert death (Uspensky) is confirmed. Neither rigor mortis nor increase of temperature occur, even when the dose is so large that paralysis of the respiratory centre takes place. The spasms from poisoning with caffein do not, as a rule, appear in animals when artificial respiration is kept up, nor in curarised frogs, nor in extremities after division of the nerves, at least not in frogs. In poisoning with caffein, alcohol seems to be valuable. Three experiments show that quite another picture is presented when caffein and alcohol are given simultaneously. The temperature of the intoxicated animal rises again; the affection of the brain becomes less, and the inability for movement passes into violent effort to move. If the dose of the antidote be too strong, then it unites its effects with that of the alcohol.

TARCHANOFF ON THE INFLUENCE OF CURARA ON THE QUANTITY OF LYMPH, AND THE EMIGRATION OF THE COLOURLESS CORPUSCLES OF THE BLOOD.—J. Tarchanoff (*Archives de Physiologie*, November, 1875, p. 33) combats the assertion of Drozdoff that curara dissolves the colourless corpuscles of frogs. Of four sorts of curara which Tarchanoff added in a concentrated solution to the colourless corpuscles suspended in frog's serum, two produced after a long time a solution of the colourless corpuscles; several, however, showed that the free granules remained completely undissolved. Whether this phenomenon depends upon accidental impurities in the curara, the author leaves undecided; the two other portions of the poison were completely inactive.

If curara were injected subcutaneously into a frog, a pretty large dose being given, but not sufficient to paralyse the heart, the number of colourless corpuscles diminished and that of the coloured increased; the number of the former (from a series of experiments conducted after Malassez's method) contained in a cubic centimetre of blood fell to about half of the normal; the latter rose to double. After the return of mobility, *i.e.* after four or five days, the normal condition returned. As the cause of this condition of the blood is to be regarded a very great increase of lymph, very rich in colourless corpuscles, and which coagulated very rapidly, not only in the

dorsal lymph-sac, but also in other lymph-sacs of the body. Specially well filled was the sac underneath the tongue. [This pronounced filling of the lymph-sac was known to Bidder, who referred it to paralysis of the lymph-hearts.]

The author, in confirmation of several papers emanating from Ludwig's laboratory, assumes an increased transudation from the blood-vessels of curarised animals. A lively emigration of colourless elements was directly observed in the tongue and mesentery of curarised frogs. This also occurred when the cerebro-spinal axis was carefully destroyed without hæmorrhage. In both cases the author assumes as the cause of emigration an increased transudation and increased lateral pressure in the small arteries in consequence of the extinction of the tonus. As long as the paralysis continued, the blood became poorer in serum and white elements. With cessation of the paralysis the pronounced diminution stopped; the lymph-sac emptied itself again, and the normal condition of affairs was soon restored. This emptying could also be produced by electrical stimulation during the period of paralysis.

In conclusion, the author makes some objections to Cohnheim's doctrine of suppuration. The condition of curarised frogs proves that enormous outwandering of colourless corpuscles can take place, which is not to be identified with suppuration. In addition, the author has convinced himself, like Malassez, that with continued suppuration the number of white blood-corpuscles does not diminish, but rather increases. Further, Ranvier has lately observed the direct division of white blood-corpuscles.

Lastly, the author cites some results upon the distribution of curara in the tissue-juices and upon its excretion. For testing its presence, he employed the physiological method. The blood of large strong curarised frogs never showed, when it was injected into the lymph-sac of small frogs, poisonous properties. Only in very small animals it produced a slight muscular weakness which rapidly disappeared. The bile and lymph gave negative results; the urine on the contrary was very poisonous, and this took place from the beginning of the curarisation, and during the entire duration of the paralysis. If the cloaca were occluded, the urine stagnating in the bladder lost its poisonous properties. Under these circumstances, therefore, the curara is destroyed.

GRÜTZNER ON THE FORMATION AND EXCRETION OF PEPSIN.—P. Grützner describes some new investigations on the formation and excretion of pepsin (*Breslau*, 1875, 8vo, pp. 86, and *Centralblatt für die Medicin. Wissenschaften*, no. 52, 1875.)

I. On the estimation of pepsin.—The author gives more exact details regarding his colorimetric method. He recommends the filling of a series of equally thick test-glasses with solutions of carmine of different strength for comparison. Carmine is dissolved in ammonia and diluted with glycerine, until a 0.1 per cent. solution of carmine is obtained. Of this solution of carmine, 0.1 cubic centimètre is dissolved in 19.9 cubic centimètres of water, 0.2 in 19.8, etc., up to 1.0 cubic centimètre in 19 cubic centimètres of water. One can, of course, only regard the colour of the fluid by solution of the coloured fibrin as a measure for the quantity of pepsin, as long as some fibrin remains uncoloured. The differences of several fluids containing unequal quantities of pepsin become indistinct when the

action lasts for a very long time, as the weak solution of pepsin ultimately dissolves all the fibrin.

Then there follows a critical and experimental treatment of the question whether pepsin is used up during digestion. The experiments of the author were made thus. Relatively large quantities of hydrochloric acid and pepsin were treated with different quantities of fibrin. Large quantities of fibrin constantly required longer time for their solution than when the amount was small; at least, this is true of not too concentrated solutions of pepsin. In other experiments, the solutions of pepsin were allowed to act for varying periods of time on fibrin, and then the amount of the pepsin in the fluid was estimated by the colorimetric method. In such cases, the amount of pepsin was smaller the longer the action of the fibrin on the fluid had lasted. It therefore follows that *pepsin is used up during digestion*.

II. The quantity of pepsin in the stomach under different physiological conditions.—Schiff asserted that certain substances, e.g., dextrose, on being introduced into the stomach, or by direct introduction into the blood were able to increase extraordinarily the quantity of pepsin in the mucous membrane of the stomach, to load the gastric follicles with pepsin. These results had never been confirmed. The author ascribes the error in Schiff's results to this:—that Schiff, by his method of extracting the mucous membrane with small quantities of slightly acidulated water, obtained very varying quantities of pepsin in solution. The quantity of pepsin obtained under these conditions does not bear any relation to the quantity of pepsin actually contained in the mucous membrane; mucous membranes poor in pepsin appear to give up their pepsin easily. In addition, many substances when introduced into the blood possess the property of changing the mucous membrane of the stomach so that it gives up its pepsin more easily. The author shows that common salt possesses this property, and so does one of Schiff's peptogenic substances—viz., dextrose. By employing the method of Schiff one obtains results similar to his; still the conclusions he drew from his experiments were erroneous.

To determine the quantity of pepsin under different physiological conditions, the mucous membrane, with the muscular coat removed, was washed and dried on blotting-paper. On drying, the sub-mucous tissue for the most part adhered to the paper; the dried fragments were powdered and preserved in an exsiccator. This preparation was extracted with glycerine and then with 0.1 per cent. of hydrochloric acid. The glycerine extract represents the free pepsin, the acid one the fixed. For 0.1 gramme of the dried mucous membrane, 8 cubic centimètres of glycerine, and the same amount of hydrochloric acid were employed; extraction with glycerine lasted eight days, that with hydrochloric acid twenty hours. Of the extracts so obtained 0.1 cubic centimètre, or, when the pylorus had been used, 0.5 cubic centimètre was treated with 15 cubic centimètres of hydrochloric acid of 0.1 per cent. and fibrin. The microscopic investigation of the mucous membrane was conducted after hardening in alcohol, the sections being coloured with carmine, picrocarmine, or aniline blue. Stomachs of the dog, cat, pig, and rabbit were employed. The results obtained were the following.—1. The quantity of pepsin in the mucous membrane varies. 2. It varies with different conditions of the peptic cells; if these be bright and large, they contain much pepsin; if they be shrivelled and

turbid, little; a moderate size and turbidity correspond to a medium amount of pepsin. 3. What is true of the peptic cells of the fundus is also true of the same cells of the pylorus; large clear cells indicate a large amount of pepsin. 4. The turbidity of the peptic cells is a sign of the secretion of pepsin. With regard to the relation of the formation of pepsin to the food taken, the following are the results in the dog, the pylorus being employed. The quantity of pepsin increases from the time of taking food till about the ninth hour thereafter; it falls slowly till the thirtieth, and again rises slowly till the fortieth, and then remains so. The fundus after the introduction of food after long fasting, yields very rapidly a great quantity of pepsin till about the ninth hour. At this time the minimum quantity in the fundus corresponds with the maximum quantity in the pylorus. From this point onwards the quantity rises till the thirtieth hour after food, and remains so for fifteen to twenty hours. If the fasting last longer (sixty or seventy hours), a spontaneous secretion occurs, the quantity of pepsin in the fundus diminishes. The conditions are similar in the cat, only here the first period lasts eighteen instead of nine hours. Similar results occur in the pig; in the rabbit, on account of the stomach always remaining full, the stages of secretion are not so clearly pronounced.

III. *The secretion of pepsin observed in dogs with gastric fistula.*—In the fasting condition scarcely any secretion takes place in the stomach. A fluid of alkaline reaction is generally discharged from the fistula—viz., the saliva which has been swallowed; only exceptionally does this contain pepsin. If indigestible substances which powerfully stimulate the stomach, are introduced into it, a profuse secretion of a very active gastric juice takes place, which soon (at most one or two hours) becomes much less active; six or seven hours after the introduction the quantity of pepsin again rises. Similar results occur on introducing foods. The increase in the quantity of pepsin from the sixth to the seventh hour is due to activity of the parts near the pylorus. The conditions for secretion are altered, however, when foods are introduced into a stomach not quite empty, as under ordinary circumstances is generally the case. The quantities of pepsin secreted by a stomach twelve to fourteen hours after a good diet on the introduction of more food are much smaller than after a continued long fast. The quantity of pepsin in the gastric juice diminishes continually; an increase in its quantity is not to be observed at any time. In the case of a dog suffering from an intense catarrh of the stomach for several weeks, produced by introducing some pebbles into it, the secretion was continuous, and was not, or but slightly, affected by the taking of food. The juice secreted was turbid, sticky, not always of acid reaction, sometimes neutral and even alkaline; it always contained pepsin, but sometimes extremely little. The author therefore recommends that in cases of chronic catarrh of the stomach only small quantities of food should be given at once, and soon thereafter 30 to 40 cubic centimetres of a 0.04 per cent. of hydrochloric acid.

IV. *On the participation of chlorides in the secretion of pepsin.*—If a pylorus which has been washed be extracted with glycerine, one generally obtains a very weak extract. If the pylorus be treated with solution of common salt the extract is very much more active. The common salt breaks up a compound in which the pepsin in the pylorus is con-

tained. If the common salt has also this action in the organism, mucous membranes rich in pepsin must also be rich in common salt. In fact, a series of experiments showed that the quantity of common salt in the dried mucous membrane varied from 0.6 to 1.5 per cent., and the large amount coincided with enlarged and clear peptic cells which contained a large quantity of pepsin. If a large quantity (10 grammes) of common salt be injected into the veins of a fasting dog, the pepsin is excreted more rapidly, so that one hour after the beginning of the experiment the mucous membrane is always thinner than in the animal used for the control experiment. This observation agrees with that of Braun on the increase of the secretion after chloride of sodium.

WM. STIRLING, D.Sc., M.D.

EULENBERG AND LANDOIS ON THE THERMAL EFFECTS OF EXPERIMENTS UPON THE NERVOUS SYSTEM OF DOGS.—Professors Eulenberg and Landois, of Greifswald, have published (Virchow's *Archiv*, April, 1876) the results of numerous experiments on dogs, which seem to have been undertaken with great care, and in which the time elapsing in each stage, as well as the readings of the thermo-electric needle, are carefully given. The following are some of their results.

1. Irritation of the cervical sympathetic in its continuity caused immediately cooling of the corresponding ear (about 1° C.), which continued even after the irritation had ceased for a time—fifteen to twenty seconds—and was followed by a sudden elevation of temperature to more than its original level (about 2° C. in fifty seconds).

2. Cutting the sympathetic in the neck caused at first a passing reduction (0.1° to 0.2° C., in ten seconds), followed by a steady and rapid rise of temperature in the corresponding ear (6° C. in seventy-five seconds).

3. Irritating the peripheral end of the cut sympathetic produced exactly the same results as irritation of its continuity.

4. Section of the sciatic nerve caused immediately a slow but steady rise in the temperature of the corresponding foot, equal to 3° C. in 275 seconds.

5. Strong irritation of the peripheral cut-end caused, after a short latent stage (fifteen seconds), a steady cooling of the foot (about 1.8° C.), which reached its maximum some time (sixty seconds) after the irritation had ceased, and was followed by a very slow rise of temperature. In this stage the peripheral end was again strongly irritated, causing a cooling of the foot, preceded by a latent stage (thirty seconds), which reached a less degree than on the first occasion, being only about 1.1° C. After this the temperature rose, but stopped at 1.1° C. below the original figure. R. SAUNDBY, M.B.

PATHOLOGY.

GENZMER ON CHANGES IN THE SPINAL CORD AFTER AMPUTATION OF A LIMB.—Dr. A. Genzmer (Virchow's *Archiv*, vol. lxi. p. 265) found the following alterations in the spinal cord of a man who died of typhus, thirty years after amputation of the right thigh in its lower third. Examined from below upwards there was nothing unusual in the *conus medullaris*, and a want of symmetry was first observed at the commencement of the lumbar

swelling; this was most marked at the junction of the lower and middle thirds, became again considerable above the middle, and disappeared in the upper third. The parts above the lumbar enlargement were normal. The change on the right side consisted in diminution of the anterior cornua, accompanied by a remarkable decrease in the number of the ganglion-cells; the anterior roots also were thinner and less numerous than on the left side. There were no perceptible differences in the structure of the parts, neither were the nerve-tubes thinner, as described by Vulpian, nor were the ganglion-cells corrugated, pigmented, and deprived of their processes, as in J. Thompson Dickson's case; if those of the right side were sometimes smaller, they were not constantly so. The posterior cornua and columns were healthy; the central canal closed throughout.

LEBERT ON ANEURISM OF THE PULMONARY ARTERY AND RHEUMATIC INFLAMMATION OF ITS VALVES.—In the *Berliner Klin. Wochenschrift* for May 15, Dr. Lebert, of Vevey, reports the case of a woman, aged thirty-five years, who was admitted suffering from considerable oedema of the legs, ascites, dyspnoea, and cough. Physical examination yielded the following:—Præcordial dulness much extended to the right and left; the apex-beat beyond the nipple line in the fourth space; dulness over the upper part of the sternum, and the left first and second intercostal spaces; over this area pulsation, systolic and diastolic murmur, and double thrill; at the apex a systolic murmur not continuous with the above; in the second right intercostal space a diastolic murmur. Over the lungs generally were heard catarrhal rhonchi. Hepatic dulness reached from the fifth rib to the costal margin. The urine contained much albumen, blood, and casts. Respiration 28, pulse 96. The sphygmographic tracing showed a marked respiratory wave. The pulse gradually rose to 130; and with increasing dropsy, drowsiness, and collapse, she died twelve days after coming under observation.

She had been well till seven months previously, when she had rheumatic fever, with much dyspnoea. The pain subsided in three weeks, but swelling and dyspnoea continued until admission. *Post mortem*, there were found dilatation of the right ventricle, globular dilatation of the pulmonary artery, and endocarditis of its valves. Of these, two were much larger than the third: all presented numerous vegetations on the cardiac surface, and somewhat fewer on the arterial surface and free edge. On the corresponding points of the ventricle and artery were similar deposits. The left ventricle was also dilated, and there were slight evidences of endocarditis of both sets of valves. The spleen was large, the kidneys dense, the lungs throughout crepitant, but slightly oedematous; the arteries free from embola. The author regards the valvular disease as too recent to have been the origin of the pulmonary aneurism, but supposes that the pre-existing dilatation may have determined the unusual localisation of an endocarditis, accompanying rheumatic fever.

F. TAYLOR, M.D.

BEIGEL ON GIANT-CELLS.—Dr. Hermann Beigel, in a paper (*Virchow's Archiv*, April, 1876) on the pathology of cauliflower excrescences, directs attention to the almost universal part played in morbid anatomy by giant-cells. He quotes the observations

of Johannes Müller on their appearance in cancers and enchondromata; of Kölliker, in the bones of the normal skeleton; of Wagner, in the arterial coats; of Rustizky, in the re-absorption of callus; of Virchow, in the lymphatic glands, and in the omentum in tubercular peritonitis; of Paget, in marrow tumours; of Schuh, in epulis; of Groh and Lanceriaux, in other tumours; of Langhans and Klebs, in tubercle, and in the early stages of elephantiasis by the latter; of Brodowski, in the granulations of chronic ulcers; and of Alexander Jacobson, in the healthy granulating wounds of soft parts. He thinks these researches prove that these cells cannot be considered as peculiar to any normal or pathological tissue, and that it may be said that under favourable conditions any cell may degenerate into a giant-cell; and he believes these conditions are present wherever a more rapid development or degeneration of tissue, or both together, are present.

FUCHS ON TRAUMATIC KERATITIS.—A long paper on this subject, by Dr. E. Fuchs (*Virchow's Archiv*, April, 1876), contains the result of original researches by the author into the normal anatomy of the cornea and the results of destructive lesions of its surface. His conclusions are as follow. The cornea may be said to be made up of formative elements capable of being brought into two separate morphological categories, which for the cells separate them as dendriform and straight, and for the other elements find expression in the spheroidal and spear forms. A wound made in the cornea by the red hot point of a needle has for its immediate consequence the death of the proximately cauterised cells—forming the vacuole zone, as he calls it. The cells next these respond to the irritation by proliferation, and form the irritation zone, and at the same time commences the wandering of white blood-corpuscles into the cornea. These new elements group themselves round the irritation zone, but after the lapse of one day begin to disappear by wandering to the surface of the cornea. After the third day a thicker belt of cells is built up by corpuscles floating to the outer edge of the irritation zone, which after the seventh day becomes changed into a thick wreath of spikes; this he calls the secondary proliferation zone. This last formation removes by pressure the slough caused by the cautery, which till then has covered the vacuole and irritation zones. A slighter wound, such as scratching the cornea, causes at once changes in the form of the cornea-cells; this ends by the death of the cells, and the subsequent development of an inflammatory process similar to that described above.

R. SAUNDEY, M.B.

SOCOLOFF ON THE PATHOLOGY OF ACUTE SWELLING OF THE SPLEEN.—Dr. Socoloff, of St. Petersburg, gives (*Virchow's Archiv*, February, 1876) the results of his work on this subject at Professor von Recklinghausen's Institute. The question proposed for investigation was whether any of the lower organisms are present in the spleen in cases of septicæmia, and if so, what relation they bear to that swelling. Virchow, in 1857, in a case of diphtheritic endocarditis, found the splenic arteries plugged by granular masses, which resisted the usual reagents, and which could therefore be easily distinguished from mere detritus. Waldeyer also has published a case of intestinal mycosis, in which the splenic vessels, and also those of other organs, were plugged with fungus-elements, and their surrounding parts

infiltrated with blood. And Birch-Hirschfeld, by means of experiments, has corroborated the significance of micrococci in swelling of the spleen.

Dr. Socoloff's observations are partly pathological, partly experimental. The former are based on twelve cases of typhoid fever, ten of pyæmia after fractures, six of puerperal fever, three of acute peritonitis, and others of intestinal and pharyngeal diphtheria, phthisis, endocarditis, scarlatina, acute rheumatism, and croupous pneumonia. The spleen was always enlarged, but varied in size in different cases. Its increase was due to engorgement, to hyperplasia of its tissues, and enlargement of the cells of its pulp. The altered cells grouped themselves in clusters, and the adventitia of the blood-vessels was infiltrated with young cells. In one case the Malpighian corpuscles were enlarged, and notably in typhus and pyæmia, circumscribed capillary extravasations were present. Micrococci were only found in certain cases. Notes of six such are given. Two of pyæmia, one of phthisis, three of enteric fever.

The following conclusions are formed from these observations. 1. Swelling of the spleen in infective diseases is not always due to the presence of fungus in its tissue. 2. In all cases in which positive results were obtained, colonies of micrococci were seen both in the vessels and in the pulp-tissue. In the vessels they formed plugs. In their walls they were between the trabeculae of connective tissue. 3. When these bodies were present, the infection was of recent date.

The question, therefore, still remained unsolved whether, since their presence was not constant, micrococci were more than an accidental phenomenon, which had no causal relation with the splenic swelling. On the other hand, it is quite possible that they, having originated such a swelling, had lived their life and perished ere the swelling had subsided.

These points could only be settled by experiment. To this end a series of rabbits were taken, and putrid inflammatory and other fluids injected into the peritoneum.

The results appear to have been pretty constant, viz., a more or less intense peritonitis and swelling of the spleen in all cases, with, if the animal died within three or four days, micrococcus-masses, in the blood-vessels of the spleen and kidneys; if it lingered over a week, the absence of any such bodies, but the presence of an excess of pigment in the spleen.

From this it appears that, though swelling of the spleen is always associated with the presence of micrococci in its tissues in the early stages of infection, it is not so in the later periods, and cannot therefore be dependent entirely upon their presence.

The experiments were all conducted under nearly comparable conditions, both as regards the animals used and the fluid injected; and if after long periods of infection micrococci were not met with, while they were constant in all cases of early poisoning, it is clear that they must have disappeared previously.

This point having been determined, the different results obtained from the examination of the human spleen in the various infective diseases receives an explanation. It does not follow that because, in our anatomical inquiries, only a small number of the investigated cases showed the presence of micrococci, therefore they did not exist in the remainder. It is much more probable that their course in the human spleen will correspond exactly with that of those in the lower animals under experimentation,

and it has been seen that in these the micrococci disappear after a certain time. In typhoid fever they are only present in the early stage, *i.e.* when the changes are confined to the neighbourhood of the valve, and have not gone beyond swelling and superficial ulceration. Moreover, the observations both of Billroth and Socoloff, seem to show that certain multinucleated cells in the splenic pulp are only found in the early stage of the typhous process. These were found in the cases now recorded, and their presence further links the micrococci with the early fever. In the first described case of pyæmia, the individual whose spleen and other viscera were permeated by micrococci died very quickly.

The adoption of the hypothesis of the disappearance of the fungus from the tissues is by no means without precedent. Lukomsky has found a similar course of events in erysipelas, and Obermeier's observations on the spirilla of relapsing fever are well known.

It is important to add that Birch-Hirschfeld has found micrococci present in the blood seven or eight days after the injection of the poisonous material, and he also states that whenever the spleen is large micrococci are to be found in its tissues. Dr. Socoloff attributes such statements, differing as they do somewhat materially from his own, to the fact that the former was content to see only isolated grains, while he required evidence of the formation of colonies. Dr. Socoloff's results are also at variance with those of Birch-Hirschfeld, when he says that after the injection of putrid fluids into the serous cavities a local inflammation may result, and the animal die without the presence of any number of micrococci in the blood, and without any swelling of the spleen. On the contrary, the former has found, even one hour after the infection, that the lymphatics of the diaphragm and the blood-vessels of the spleen were filled with parasitic organisms.

The swelling of the spleen in these cases appears to be due partly to an inflammatory process which the micrococci, free or enclosed in wandering cells, or subsequently building colonies, excite; partly to the engorgement which necessarily follows the plugging of many of the vessels by these foreign particles.

JAMES F. GOODHART, M.D.

RECENT PAPERS.

A Case of Congenital Stenosis of the Pulmonary Artery, with Persistence of the Foramen Ovale, and an Aperture in the Ventricular Septum. By Dr. P. Gatti. (*Annali Universali di Medicina e Chirurgia*, April.)

On the Anatomy of Ovarian Cysts. By MM. Malassez and de Sinéty. (*Gazette Médicale de Paris*, May 20.)

Communication between the Ventricles of the Heart in a New-Born Infant. By M. Polailon. (*L'Union Médicale*, May 23.)

Some Observations Relative to the Formation of Pus. By Dr. V. Brigidì. (*Lo Sperimentale*, June, 1876.)

MEDICINE.

BENEKE ON THE PATHOGENESIS OF ARTICULAR RHEUMATISM.—In the *Berliner Klin. Wochenschrift* for March 1876, are some remarks by Professor Beneke on the pathology and etiology of articular rheumatism based on 246 cases of the disease. Of these, however, 64 were either from the first cases of osteo-arthritis, or passed directly from the acute into a chronic stage, in which condition they first came

under notice. No cause whatever for the disease could be discovered in 32 cases; of the remaining 214, a directly hereditary or family tendency could be traced in 74, while in the other 140, sexual excesses, exhausting confinements and lactation, uterine diseases with the functional disturbance consequent upon them, over-exertion, chills, and less frequently rickets, chorea, epilepsy, meningitis (in early life), gonorrhœa, syphilis, measles, etc., preceded the development of the disease. The author regards these as so many conditions exercising upon the nervous system a depressing influence, which, acting upon a body in a certain state of preparation, leads to the production of rheumatism. This state of preparation consists in an increased formation and accumulation of organic acids, the result of the interference in the metamorphosis of muscular tissue which disturbed innervation brings about. Such a view is supported by the well known condition of the secretions in rheumatism, by the beneficial influence of alkaline vegetable juices, and by the extreme rarity of rheumatism in herbivorous animals. Only, then, in those in whom this humoral foundation is present will the above etiological conditions set up the disease; where it is wanting some other affection will be the result, and in healthy individuals probably none at all.

GOLTDAMMER ON SPINAL APOPLEXY.—In the January number of Virchow's *Archiv* (Bd. lxvi. p. 1) Dr. Goldammer describes fully a case of paraplegia, which he regards as undoubtedly the result of spontaneous hæmorrhage into the spinal cord, independent of any previous inflammatory softening. On April 21, 1874, a girl, aged fifteen, apparently in perfect health, was suddenly seized with violent pain in the back between the scapulae, extending rapidly to the arms, the lower part of the chest, and the epigastrium. The right leg became at once powerless, and in another half hour the left was in the same condition. Two hours after the commencement of the attack she had complete paraplegia, complete anæsthesia up to the level of the nipples, persistence of reflex movements in the lower extremities, and paralysis of the bladder; in the upper extremities, severe pains, but free movement and normal sensation. The functions of the brain were perfect. The case continued to present all the characters of paraplegia from a localised lesion of the spinal cord. The electric irritability of the muscles remained normal; the urine was retained; and bedsores appeared. After two months the reflex irritability became excessive; somewhat later spontaneous twitchings of the paralysed muscles took place; and towards the end of August the legs were persistently contracted, at first in the extended, later in the flexed position. Increasing bedsores led to a fatal result, twelve months from the beginning of the illness. On opening the spinal canal, the dura mater was found normal; the spinal cord was contracted to half its width at a point corresponding to the second dorsal nerves, and here the pia mater was a little thickened. This narrow portion had a vertical extent of about one-sixth of an inch. On section there was no trace of grey matter, but the greater part was of rather hard consistence, and in colour rusty brown with whitish yellow streaks. The white columns on the left side were softer and tinged grey. A rusty streak was traceable in the situation of the right posterior cornu upwards to the cervical swelling, and downwards as far as the fifth dorsal nerves. On micro-

scopical examination, the dense rust-coloured portion was found to consist of a firm network of connective tissue fibres, with embedded fat-globules, large masses of hæmatoidin crystals, and collections of brown granular pigment. Nerve-elements were entirely wanting, and the vessels showed fatty and granular degeneration. The greyish columns on the left side, and the whole cord for a few millimètres above and below the rusty cicatricial tissue, were in a condition of softening with the usual granule-corpuscles replacing the nerve-fibres and ganglion-cells. Secondary degeneration could be traced downwards in the lateral columns to the lumbar region, and upwards in the posterior columns as far as the calamus scriptorius.

F. TAYLOR, M.D.

DAVIS ON REVACCINATION DURING AN EPIDEMIC OF SMALL-POX.—Dr. William B. Davis, in a paper read before the Cincinnati Medical Society (*New York Medical Record*, March 25), comes to the following conclusions from observations in that city during an epidemic of small-pox. 1. Exposure to infection and intense epidemic influence largely increase the susceptibility of the system to the influence of vaccine virus and accounts for the unusual number of successful revaccinations during the existence of an epidemic. 2. Variola and varioloid give no more protection from a recurrence of variola than vaccination. 3. The cicatrix is not a safe criterion of the degree of protection given by the vaccination from which it resulted. 4. It is advisable to revaccinate upon every exposure to infection, unless it has been done recently with success. 5. Those who were successfully revaccinated were, to some extent, susceptible to the variolous influence, not that all would have taken the infection, for an epidemic never takes all the unprotected. That they are in some danger is proved by the results of vaccination in the hospitals and standing armies of Europe. In the Prussian army the annual death-rate from small-pox, before revaccination was introduced, averaged 104. During the twenty years immediately succeeding the establishment of systematic revaccination there were but forty fatal cases (an average of two per year), and Simon says but four of these had been successful revaccinations.

W. DOUGLAS HEMMING.

OPPLER ON A CASE OF MENINGITIS WITH APHASIA.—Staff Surgeon-Major Oppler, M.D., of Danzig, reports the following case in the *Deutsche Medicinische Wochenschrift* for April 15, 1876. Grenadier K., aged twenty-one, was admitted into the infirmary June 30, 1875. On admission, he seemed stupid. There was considerable difficulty in getting him to give his name, and his memory was so bad that it was difficult to believe that two days before he had been in perfect health, and discharged all his duties. But just two days before admission he was taken ill without any known cause; had had severe headache, but came into hospital because of several shivering fits, alternating with heats, and because he felt very ill. He was a strong, well-built man, and lay on his back, complaining, in broken words—which were uttered one at a time—of pains in his head, chest, and limbs. His manner was very apathetic. The bladder was much distended; but after a good deal of persuasion he passed a quantity of clear yellow urine free from albumen. His muscular weakness was great; the tongue moist, red, not coated, and not deviating

from the middle line. There were no physical signs of serious chest disease. Cardiac dulness was normal, and the heart's sounds clear. The abdomen was soft, concave, and not tender. There was no eruption, and no enlargement of either liver or spleen. The pupils acted well. Pulse 70, of moderate tension. Temperature 38°C . (100.4°Fahr). The bowels acted yesterday. There had been no vomiting yet. It was evident that speaking was very difficult to him. Single words were pronounced hesitatingly (*zögernd*). July 1. The patient had slept; he was still apathetic; to-day his facial expression was painful; the tongue was red, and quite dry. Pulse 80; temperature 38.5°C . ($=101.3^{\circ}\text{Fahr}$); respiration 25. There were a few moist râles in the chest, but elsewhere vesicular breathing; catarrhal sputum in moderate quantities, easily disposed of. The pupils still acted well, but his speech was worse than yesterday. He quite understood what was said to him, but could not properly and clearly finish the words he began—the words themselves were right, but his utterance of them was only partial; and when he noticed that he could not finish his sentence, he became unwilling to do so and angry, and screamed out inarticulate sounds instead of the word he wanted to finish. His appetite was slight. Towards evening he grew drowsy, but could be awakened by calling to him. Sensibility was diminished all over the body, and irritants produced but little effect. July 2. The patient was drowsy, yet could be easily awaked; he talked a little better, or, at all events, it was easier to understand the words which he still only half-pronounced. Every now and then the angles of the mouth were retracted, and he had painful yawning. In the evening his speech was again embarrassed. Instead of the word he wanted, only the first syllable, or sometimes only a single letter of the word, was screamed out, and he nodded with the head as if contented, when the words were properly finished for him. The pupils were still not small. The patient understood what was said to him, and pointed out the parts of his body where he felt pain. Pulse 60; temperature 38.4°C . ($=101.2^{\circ}\text{Fahr}$). July 3. He passed a tranquil night, and lay quiet, but slept little. During the night it was noticed that his speech became worse; he now seemed unable to speak at all. His facial expression was tranquil. Pulse 60; temperature about half a degree (Fahr) lower. He still showed that he understood, and made his wants known by signs, yet seemed unable to speak even a single syllable. The abdomen was retracted, like the inside of a boat in outline. All the right half of the body had perfectly lost sensation. On the left side it was very imperfect. Violent yawning was continuous; the pupils acted well. July 4. His state was the same as before. To-day the patient could only say 'Herr Jes...' and 'Ja wohl,' although hesitatingly. Morning temperature 38.4°C . ($=101.2^{\circ}\text{Fahr}$); evening 39.3°C . ($=102.8^{\circ}\text{Fahr}$); pulse 72.

There was on July 5 no change in his condition; to all questions he answered 'Herr Jes...' ('Lord Jes...'). Pulse 72; temperature 38.8°C . ($=102^{\circ}\text{Fahr}$). His urine was of a deep yellow, without sediment, and free from albumen. In the evening he tried hard to say something, but could not get out a word. July 6. He was very restless in the night. He did not now attempt to speak. His intellect seemed very much affected; he no longer put out his tongue when told to do so. Pulse 80; temperature 38°C . ($=100.4^{\circ}\text{Fahr}$). The left pupil seemed

a little smaller than the right; both acted well. Sensation was as before. In the evening he seemed quite unconscious. He made continual snatching movements with his right hand, and picked at the bed clothes. The pupils acted badly now. The temperature had risen nearly 1°Fahr ; pulse 70. July 7. He was perfectly unconscious; there were continuous snatching movements with both hands, so that his arms were never quiet. The right pupil still acted very slowly; the left was dilated and immobile. There was still sensation in the left half of the body. Pulse and temperature as last night. July 8. There was deep coma. The left arm, flexed at the elbow, could not be extended. The right pupil still acted; the left was as before. His respiration was deep and noisy, with deep sighs in between. In the evening the right pupil was very much contracted and immovable, the left large and fixed. Tracheal râles set in. Pulse small, and not to be counted. Temperature 38°C . ($=100.4^{\circ}\text{Fahr}$). He died early next day.

At the necropsy there was nothing remarkable in the skull, or in the (longitudinal) sinus. There were very numerous and remarkably large Pacchionian glands on the summit of both hemispheres. When the dura mater was removed, the vessels on both hemispheres of the brain were seen to be greatly congested; the pia mater was whitish-grey and opaque, especially in parts where the vessels branched, otherwise the convexity of the brain appeared normal. At the base the pia mater of the left side, in the hollow between the brain and the temporal lobes, was thickened, and so to speak, felt (*verpilzt*); and in the midst of this thickened and matted tissue there was a layer about an inch in its longest diameter, of greenish-yellow masses of oval form; the brain-substance above appeared perfectly normal to the naked eye, and free from any deposits or thickening. There was no exudation into the ventricles, and the pons and other great centres exhibited nothing abnormal. On both hemispheres, beneath the pia mater, many cysticerci, about the size of peas, were found between the gray and the white matter. The vessels of the spinal cord were much injected, and there was a good deal of cerebro-spinal fluid. The substance of the cord was pale, and somewhat denser than normal. Except hypostatic congestion of the lungs, and considerable swelling of the bronchial mucous membrane, the other organs of the body appeared quite healthy.

In commenting on this case, Dr. Oppler remarks how little fever accompanied these serious symptoms, and notes the absence of vomiting and constipation. There were no convulsions—the pupils acted well for a long time—there was no delirium. Consciousness was maintained till the sixth day of the attack. There were no symptoms of cerebral irritation.

Although there was some torpor the patient was easily roused, and though he had lost his speech, he made his wants known by signs. Till the day before death, his pulse was neither quickened abnormally, nor abnormally slow, varying between 60 and 80. It is also noteworthy, that on July 1, the second day of disease, a characteristic affection of speech enabled the lesion to be located in the left half of the brain. Most, if not all, of the cases of aphasia reported have been from destructive causes—tumours, apoplexy, softening, etc., none of which were present here. He had meningitis of the convexity in very slight degree, and more severe meningitis at the base of the brain, but limited to the fossa of Sylvius, on the

furrow between the anterior and posterior lobes, where only it had gone on to suppuration, but, as far as the naked eye could determine, the brain-substance was not affected; it would therefore seem as if all that is required for aphasia is inflammatory irritation in the fossa of Sylvius, or thereabouts, without the second or third convolutions being actually diseased. The intelligence displayed by this man negatives Trousseau's dictum that there must necessarily be some affection of the intellectual faculties in aphasia. The patient perfectly knew the words he wanted to say, but could not co-ordinate the muscular groups, whose combined action is necessary to speech of articulate kind. The opinion of Bouillaud and Trousseau, that the 'speech-centre' of the brain must be wholly or almost entirely destroyed in aphasia, is also upset by this case.

[It seems a pity that the man was not asked to write, as there does not seem to have been any hemiplegia; also that the brain-substance was not examined by the microscope. The case is, however, very carefully reported, and is extremely interesting. It fully confirms Dr. Hughlings Jackson's view, that the kind of injury is less important than its topography, and that suddenness, or initial force, is of more consequence than mere magnitude.—*Rep.*] W. B. WOODMAN.

FOURNIER ON SYPHILITIC PHTHISIS.—In the *Gazette Hebdomadaire de Médecine et de Chirurgie*, November and December, 1875, M. Fournier, the eminent syphilographer, publishes a most elaborate lecture on the pathology and clinical features of syphilitic phthisis. Syphilis can affect the lung in two distinct modes; first, directly producing specific lesions, as, for instance, gummata and the like; secondly, as a generally predisposing cause of phthisis, acting in the same way as insufficient food and bad air.

Syphilitic lesions of the lungs are rare, though not so rare as has been imagined, for they are generally overlooked during life, and only detected in *post mortem* examinations. They for the most part accompany tertiary syphilis, and generally syphilitic disease of some standing, but occasionally are the result of hereditary taint, and have been detected in the lungs of syphilitic foetus. M. Fournier only recognises two forms of syphilitic lesions; (1). Simple hyperplasia; (2). Gummata.

Simple hyperplasia closely resembles syphilitic hepatitis, and consists of cell-proliferation in the parenchyma, thickening of the septa, and consequent narrowing of the alveoli and degeneration of the contained epithelium through pressure. The new tissue constitutes at first the nucleus of interstitial pneumonia, but this is eventually transformed into hard fibrous masses. The bronchial tubes abutting on these masses become flattened and gradually obliterated, thus terminating in ampullæ. Two forms of this lesion exist, the circumscribed and the diffused. The pleura overlying these masses is prominent, white, and shining, when the hyperplasia is recent. When it is of old date, the lesion gives rise to a stellate depression on the lung-surface, resembling similar scars observed on the liver.

Gummata in the lung do not differ greatly from those in other organs. When fresh, they are solid tumours of nearly equal consistency, dry on section, varying in hue from a yellowish-white to a greyish-yellow, with a caseous centre of rounded or slightly irregular form, varying in size from a hemp-seed to a

walnut. They are few in number, and this alone distinguishes them from tubercles, for often only a single one is found; the whole number rarely exceeds six or eight. They are situated not in the pulmonary membrane itself, but separated from it by an intermediate zone of grey fibrous tissue, constituting not a true cyst but a kind of enveloping shell. Gummata generally affect only one lung, and the surface rather than the deeper lying portions, also the lower lobe in preference to the upper. They disintegrate by fatty metamorphosis in the centre, extending to the circumference; and at the same time inflammatory ulcerative changes take place in the neighbouring structures; causing perforation of the bronchi, and thus affording a means of exit for the contents of the gumma. In this way a cavity is formed, the walls of which are often covered with a white caseous material, the residue of the eliminated gumma. Externally the cavity is sheathed by a hard condensed grey fibroid tissue, the shell of the gumma. Sometimes, through rarely, by the union of several of these an anfractuous cavity may form. If death does not intervene, the tendency is towards recovery, and the walls of the cavity commence to approximate, contraction gradually taking place, proofs of which may be seen in the stellate cicatrices sometimes noticeable in the parenchyma of the lung. It is not uncommon to find in connection with gummata the first form of lesion, namely, simple hyperplasia.

M. Fournier draws five points of anatomical distinction between syphilitic gumma and tubercle.

1. *From situation.* Tubercle usually attacks (in process of time) both lungs, and as a rule the upper lobes. Gummata are limited to one lung, and may be situated in any portion of it.

2. *Number.* Gummata are few and as a rule solitary. Tubercle sooner or later becomes confluent.

3. *Size.* Gummata are larger than tubercles, and never miliary in form.

4. *Colour.* Gummata are always white or yellow, and never semitransparent like miliary tubercle.

5. *Consistency.* Until softening takes place, the gumma is of more equal consistence than tubercle, and when it softens it does not break down so completely on account of its fibrous shell. Microscopically, no absolute distinguishing features exist between tubercle and gumma.

The formation of syphilitic lesions in the lung takes place not only insidiously, but in a manner so latent, even to the patient, that, even when they have attained a certain degree of development, the symptoms are obscure. They consist of slight discomfort in respiration, slight cough, often dry, and if expectoration exists, it is scanty, and of a catarrhal kind. The physical signs are negative, unless the gumma be superficially situated, and then it may give rise, over a circumscribed patch, to diminished clearness of stroke-sound, and to weak breathing, with prolonged expiration. Later on, the symptoms and signs become more marked; the dyspnoea increases, but never passes a mean intensity; the cough becomes more severe and spasmodic; expectoration is abundant, yellow, mucopurulent, and even purulent; and very frequently hæmoptysis takes place. M. Fournier denies the statement of some writers, that hæmoptysis is less common in syphilitic than in ordinary phthisis, but he admits that the amount expectorated is generally less. After this, the changes in the general condition closely resemble those of ordinary phthisis. Symptoms of weakness increase, and are

accompanied by loss of colour, flesh, appetite, by languor and dyspepsia, later on by hectic, night-sweats, progressive emaciation, and physical signs denoting extensive excavation, and finally by death, in the same manner as in chronic consumption.

The course of syphilitic phthisis is usually a slow one, and far less rapid than that of tuberculosis, except when other organs become involved, when the course becomes rapid.

M. Fournier distinguishes three varieties of the disease. In the first it is *latent*, when the pulmonary lesions are of so circumscribed and localised a character as to cause neither dyspnoea nor disturbance to the general health, and therefore are not suspected during life, but detected after death.

The second variety is where lesions suffice to cause some distress of breathing, but not to produce change in the general condition, which remains excellent. The patient thrives and fattens, but complains of slight cough, expectoration, and dyspnoea; and the physical signs indicate a limited induration or excavation.

The third variety combines severe local and general symptoms, and the physical signs present all the features of advanced ordinary consumption.

The prognosis of syphilitic phthisis depends on the extent of the lesions and the influence of treatment. Putting aside the latter, M. Fournier states that it is possible for lesions, which remain localised, and affect the general health only to a slight degree, to undergo spontaneous cure, proofs of which are often furnished by *post mortem* examinations.

Where syphilitic phthisis is a general affection, and especially if other viscera besides the lungs are involved, the natural tendency is towards a fatal termination. The diagnosis of syphilitic phthisis is very difficult. In addition to the peculiarities given above, may be mentioned a remarkable tolerance by the system of the lesions, even when extensive, the patient retaining his flesh and strength to a considerable degree. When this is the case, syphilis should be suspected, and a remarkable illustrative instance is quoted from M. Gubler's practice. Another point of diagnosis is the rate of evolution, which in syphilitic phthisis is very slow, whereas in tubercle it is rapid. M. Fournier admits that this tolerance of the system is seen also in scrofulous phthisis, and therefore cannot be depended on for diagnosis; but he advocates in all doubtful cases the application of specific treatment, which will soon settle the question.

This treatment consists of iodide of potassium, from two to four, five, and even six grammes daily, and small quantities of mercury introduced by friction through the skin, as the method least likely to disturb the digestive and nutritive powers. *Locally*, M. Fournier recommends flying blisters, cupping glasses, and painting with tincture of iodine, and *generally* cod-liver oil, bark, iron, mineral waters, and hydrotherapy.

The results of treatment depend on the extent to which the general constitution and powers of nutrition of the patient have become involved. If they be extensively injured, treatment comes too late. If, on the other hand, the lesion be recent, and only betrayed by functional disturbances, the prospect of a complete cure is most hopeful. The first signs of improvement are lessening of cough, expectoration, and of distress of breathing, which symptoms often disappear entirely. Cavities contract and no signs remain of what appeared to be very extensive lesions.

M. Fournier ends with four axioms of great importance.

1. Tertiary syphilis can produce in the lungs lesions, which either locally, or by reacting on the general health, simulate pulmonary phthisis.

2. These pulmonary lesions of syphilis are often amenable to specific treatment. However grave and important they may appear, they are far from being always beyond the resources of art.

3. Consequently, when a case of pulmonary lesion presents itself, it is important, unless the existence of tuberculosis be quite certain, to ascertain if the lesion can be traced to syphilis. It is necessary always to bear in mind that syphilis is a possible cause of pulmonary lesions.

4. When syphilis can be suspected to be the cause, the primary indication is to prescribe specific treatment, which in similar cases has been sometimes followed by the happiest results.

C. THEODORE WILLIAMS, M.D.

GOETZ ON A CASE OF CHOREA TREATED WITH BROMIDE OF POTASSIUM.—The case described (*Medicinisches-Chirurgisches Centralblatt*, March 24, 1876) is the first of a series of three, in which the author recently witnessed the good effect of the drug. It occurred in a girl, aged eleven, whose only previous disease was scabies. She is described as intelligent and industrious, though somewhat hasty and easily irritated. The family history was remarkably good. The mother attributed the onset of the disease to the following incident. One evening, about a week before Christmas, 1874, the girl was busy in the kitchen, when the noise of a pigeon in the chimney so startled her that she rushed out of the room to her parents. About eight days after this, involuntary movements of the hands and feet were first noticed, and from that time steadily increased. At the first visit the nature of the affection was quite evident. When told to walk alone, she raised one foot, stretched it out, and instantly drew it back again. She threw her arms about, moved her body to and fro, wrinkled her forehead, blinked, stared, made grimaces, and every now and then sighed deeply. This 'disturbance of co-ordination' affected nearly all the voluntary muscles; speech was somewhat inarticulate, the tongue was extruded obliquely and with difficulty; but deglutition was unimpaired. The girl appeared well developed for her age, somewhat pale, but without other indications of anæmia. At the heart's apex was a scarcely audible blowing sound, which some days later disappeared; and temperature and pulse were normal. On the supposition that the symptoms might be due to worms, calomel, with *santonin*, was ordered, but without result. Then, as the anæmia had become more pronounced, iron was resorted to; but with no better effect. On the contrary, the contractions became more and more violent, deglutition so difficult that she had to be fed artificially, and speech finally ceased altogether.

After this, she was not seen for eight days. At the end of that time her condition was appalling. She was sometimes thrown up in the air out of bed. On trying to stand upright, she fell in a heap, curled up on the ground like a worm; she was quite as unable to sit up, and could not even raise her head. The mouth was wide open, the lips cracked, the face and conjunctivæ reddened, respiration difficult, feeding attended with great difficulty, and speech completely lost. She was feverish, and had become

thinner. The heart-sounds were normal; the pulse accelerated, temperature 101.8° Fahr., the skin was hyperæsthetic; there was no photophobia. During sleep all the symptoms ceased.

Bromide of potassium was now given, beginning with 15 grains *per diem*; the quantity was increased daily by 15 grains, until the maximum, 75 grains, was reached. The beneficial influence of the drug was soon apparent; within eight days the contractions diminished, the fever disappeared, the temperature and pulse became normal, the mouth less open, respiration quieter, and sleep was easily obtained. The treatment with 75 grains was continued. At the end of another eight days, improvement had steadily gone on, so that she tried to say a few words, which, however, were scarcely intelligible; she could also sit up in bed for a short time. In fourteen days more the symptoms had ceased altogether; convalescence was rapid, and the girl has since been quite strong and healthy.

RALPH W. LEFTWICH, M.D.

RAYMOND ON TUBERCULAR MENINGITIS OF THE MOTOR CENTRES OF THE ARM.—At a recent meeting of the Société de Biologie de Paris, reported in *Le Progrès Médical* of April 22, M. F. Raymond pointed out that since the study of cerebral localisations had entered upon a genuine clinical phase, thanks to the analytic method propounded by M. Charcot, a certain number of very important facts have been adduced in favour of the doctrine. He had lately had an opportunity of observing with M. Gubler, of Beaujon, a patient whose history was particularly interesting in this relation. This patient, a man twenty-two years of age, was admitted into the hospital in the early part of the month of January last, and then presented obvious symptoms of pulmonary tuberculosis, not however very pronounced. The affection, indeed, seemed to be progressing slowly. He was thin, pale, coughed a good deal, and was a little feverish.

On January 28 he began to complain of violent pain in the right hypochondrium, and two days later vomiting came on. This recurred frequently, the ejected matter having a greenish colour. At the same time he suffered from severe headache, which affected chiefly the left side of the head. Fever then showed itself, the temperature rising to 140° ; the pulmonary lesions developed more rapidly, and the general condition became much worse. On March 24 he complained of great pain in his right arm, which seemed to him to be very heavy; at times he had great difficulty in moving it. On March 25 there were fresh pains in the arm, and motor paralysis was complete, sensibility being retained. In the evening, with a great effort, he succeeded in raising his arm to his head. The paralysis of the arm, up to the time of his death, presented the character of intermittence. There never existed any trace of paralysis in the right leg nor in the left arm or leg. Perhaps there was a slight degree of loss of power in the buccolabial muscle of the right side, and a slight deviation of the tongue to the left, but these symptoms were a little doubtful. In the whole case, there was nothing else comparable with the paralysis of the arm, which was indisputable. The patient died on April 4.

At the necropsy, far advanced tubercular lesions were revealed in the right lung, and the membranes of the brain were found to be the seat of tubercular granulations. These were found in the pia mater

over the right lobe, and there they were disseminated along the parietal branch of the Sylvian fissure. On the left side, in addition to the tubercular granulations there existed some meningitis with purulent deposits. The meningitis was, if it may be so said, circumscribed and localised on two convolutions, the anterior and posterior marginal near the paracentral lobe. There the tubercular granulations were very numerous, and formed a sort of tumour. The pia mater covered with pus, adhered closely to the subjacent cerebral tissue. In other parts, where there were granulations, there was no vestige of meningitis. No other cerebral lesions, foci of softening, or obliteration of capillaries, could be discovered. There was a small amount of fluid in the ventricles, but nothing to note in the spinal cord or nerves of the arm.

Such are the facts of this case, which may be summed up as follows: motor paralysis of the right arm, somewhat intermittent in the sense that it was at times complete, and at other times less absolute; and to explain this paralysis no other lesion than the tubercular meningitis in the region of the motor centres of the arm. J. CRICHTON BROWNE, M.D.

RAYMOND ON AFFECTIONS OF THE JOINTS AND BONES IN LOCOMOTOR ATAXY.—M. Raymond publishes in the *Gazette Médicale de Paris* (Feb. 19) two cases of this kind. In the first, a woman, aged fifty-two, who had been ill for many years, the necropsy showed atrophy of the prominent processes of the humerus, femur, tibia and scapula, without osteophytes, accompanied with fibrous degeneration of the muscles of the affected joints and softening and confusion of their ligaments.

The second case, also a woman, long under M. Charcot's care, beside a similar affection of the hip-joints, suffered from repeated fractures of the bones, which broke on slight movement in bed, and healed again with profuse formation of callus.

ABNORMAL INCREASE OF TEMPERATURE.—According to the *New York Medical Journal* for February, a patient who has been under treatment in the Mount Sinai Hospital has exhibited an elevation of temperature which is seldom noticed. The history is as follows. A German woman, aged twenty, was attacked seven months ago with convulsions. She was under treatment by an irregular practitioner before entering the hospital. The treatment consisted in freely bleeding the patient from the arm at short intervals. When she came under observation at the hospital, it was supposed that the convulsions were of an hysterical character, and for this purpose the strong induced current was applied. Some time afterwards she noticed an hyperthesia of the hand, which extended upward, and by degrees involved the arm, shoulder, and side. The temperature was then taken in the rectum, and found to be 110° Fahr. This high temperature lasted only for a very few hours, and then subsided to 99° and 100° . At first it was supposed that the apparent high temperature was due to some imperfection of the thermometer, but with different instruments the same result was obtained. It has been found that the marked increase of temperature occurs with an attack of pain. The diagnosis that has been made, is of meningitis affecting the basilar portion of the brain or upper part of the medulla oblongata.

WALCHER ON CEREBRAL SYMPTOMS DURING THE OPERATION OF INJECTING THE PLEURA

WITH CARBOLIC ACID.—M. Walcher has recently related, in a paper read before the Medical Society of Strasburg, published in the *Gazette Médicale de Strasbourg* (quoted in *L'Union Médicale*, March 28), the case of a man, aged forty, who was afflicted with pleurisy, with considerable effusion on the left side, displacing the heart to the right. Paracentesis was performed; but, twenty days later, the effusion having reaccumulated, M. Walcher made an incision and inserted a drainage-tube, with a view to injecting carbolic water containing a little iodine tincture. All went well at first, until one day, perceiving that the liquid injected returned between the tube and the edges of the wound, a greater amount of force was used with the syringe, when suddenly the patient sank back, became rigid, with the head thrown strongly back, the features turgid, livid, and contracted, with trismus and contracted pupils, and whilst in this tetanic condition the respiration and pulse were arrested. In the course of an hour the patient, without having regained consciousness, fell into a comatose slumber. He remained drowsy and unconscious until the next day, when reason returned, but he had no memory of what had passed. The only symptom remaining was paralysis, with numbness and almost complete insensibility of the left arm to above the shoulder. Ten days later a fresh injection into the pleura of alcoholised water, made, however, with more caution and more gently, led to a recurrence of identical symptoms, save that the paralysis affected the right side. The patient finally recovered, and resumed his usual work as a field labourer. M. M. Raynaud has explained similar epileptiform seizures (*Union Médicale*, 1875, nos. 137-140) as of reflex production, the pressure of the fluid upon the diaphragm affecting the phrenic nerve, and the influence thus conveyed to the medulla being reflected, not through the pneumogastric, but upon the vaso-motor nerves, causing contraction of the cerebral vessels; hence anæmia of the medulla, syncope, epileptic convulsions, coma, etc. M. Walcher does not accept this explanation. He regards the effect upon the brain as direct, not reflex, and as due to capillary embolism. He conceives that little sanguineous or fibrinous plugs produced in the pulmonary veins near the surface of the inflamed and suppurating pleura become detached by the force of the injection, and are conveyed into the left ventricle, and thence to the brain.

GUENEAU DE MUSSY ON THE TRANSMISSION OF SOUNDS THROUGH ENDOPLEURITIC FLUIDS OF DIFFERENT KINDS.—Dr. Gueneau de Mussy introduces a series of papers on the physical signs of pleurisy, contributed to the *Union Médicale*, January 4 and February 17, by a critical reference to the views of Dr. Bacelli, published in the *Archivio di Medicina*, Roma, 1875, respecting the value of vocal resonance in the diagnosis of empyema. Dr. Bacelli maintains that the usual circumstances from which the diagnosis of empyema is inferred—viz. the duration of the effusion, the œdema of the side, the altered state of nutrition, and the presence of intermitting fever and of progressive anæmia—are insufficient for the purpose, and he asserts that, contrary to the opinion of Trousseau, the most violent and prolonged fever may accompany effusions which are not purulent. The variable transmission of respiratory and vocal vibrations, according to the nature of the effusion, furnish, according to Bacelli, 'the absolute criterion for differential diagnosis.'

The vocal resonance to which Dr. Bacelli specially refers is distinct from ægophony. He gives it the name of *pectoriloquie aphonique*. In order to ascertain whether this sign be present, and with what degree of intensity, the observer should apply the unaided ear to the affected side, and direct the patient to whisper some rough word, such as *trente-trois*. 'The medium most appropriate for the transmission of vibrations is the thinnest and most homogeneous liquid. The more the fluid effused approximates in character to serum, the more easily the vibrations, even the lightest, will be transmitted. It suffices, then, for the observation, to make the patient articulate in a whisper a single word whilst one auscultates the chest, and the more the liquid effused departs from the constitution of serum the thicker it is, and the less its homogeneity, from the presence of amorphous protein-bodies and morphological or corpuscular elements, the less will be the completeness and extension of the transmission of even the strongest vibration, such as that produced by the articulation of a word aloud.' This assertion, which is not in accord with the opinion of most authors, is supported by the observation of sixty cases, in all of which the diagnosis was verified either by *post mortem* inspection or by paracentesis. Dr. Gueneau de Mussy criticises one observation upon which Dr. Bacelli lays some stress as supporting his theory, viz. a case in which, from the perfection with which the whispering voice was conducted throughout the affected side, he judged the effusion to be quite limpid. On paracentesis it was found, on the contrary, to be yellow, opaque, and viscid, having the appearance of pus. On further examination by the microscope, however, this opacity was found to be due not to pus-cells, but to the presence of innumerable fatty granules, which entirely cleared up on the addition of ether. Dr. Gueneau de Mussy considers this fluid to have been originally purulent, but to have undergone fatty degeneration. He thinks that this rather adds to the value of Dr. Bacelli's observation, inasmuch as the *pectoriloquie aphonique* may thus bear witness to a molecular change in the fluid which may influence the prognosis and treatment of such a case.

The conduction of sound through fluid media increases with their densities. The intensity with which sounds are transmitted varies, however, inversely with the density of the fluid media. Still these facts, Dr. Bacelli observes, although so far in accordance with his observations, are not sufficient to account for the phenomena witnessed, for the density of pus is only very slightly greater than that of serum, and yet a sound which would be readily transmitted through a much thicker medium than pus is by it extinguished. Dr. Bacelli, in explanation of this difficulty, considers that the waves of sound passing through a heterogeneous medium, such as purulent fluid containing corpuscular elements, become by refraction, interference, and dispersion lost, just as rays of light would be under similar conditions. Dr. Gueneau de Mussy is not satisfied with this explanation, and thinks further experiments are needed to ascertain by auscultation the relative powers of transmitting sounds of water, serum, thoracic effusions, ovarian cystic fluids, etc.

Dr. Gueneau de Mussy proceeds to consider the mechanism of some of the physical signs of pleurisy. He points out that in certain cases of effusion into the pleura the affected side may yield considerable resonance, amounting to tympanic sound on per-

cussion; and he quotes a case in which such a sound succeeded to dullness, in spite of the stethoscopic signs still pointing to the presence of fluid. He considers this resonance to be due to a diminished tension of the thoracic wall, causing it to be more vibratile. The accuracy of this view was, Dr. Gueneau de Mussy considers, borne out by the fact that on making the patient take a deep inspiration and retain his breath, the percussion note again became dull over the base of the affected side, although resonant at the apex.

In M. Gueneau de Mussy's able and interesting paper, other points of interest are discussed respecting the physical signs of pleurisy.

RECENT PAPERS.

On a Case of Paracentesis of the Pericardium. Practical Considerations on large Pericardial Effusions and on their Surgical Treatment. By M. Henri Roger. (*L'Union Médicale*, July 4.)

On some Cases of Subacute Spinal Paralysis. By Dr. Goldammer. (*Berliner Klinische Wochenschrift*, June 19.)

Pulsus Paradoxus in Suppurative Pericarditis and Double Pneumonia. By Dr. W. Graeffner. (*Ibid.* July 3.)

On Exudative Bronchitis. By Dr. Chvostek. (*Allgemeine Wiener Medizinische Zeitung*, nos. 20, 21, 22, 23, 24 and 25.)

Reflections on Pneumonia and its Treatment. By Dr. Däuvergne. (*Bulletin Général de Thérapeutique*, May 30.)

SURGERY.

VAN BRABANDT ON A NEW METHOD OF SEARCHING FOR CALCULUS IN THE BLADDER.—Being obliged to make several punctures of the bladder, by Dieulafoy's apparatus, in the case of an old man afflicted with retention of urine, and suspecting from the symptoms the existence of a calculus in the bladder, M. Van Brabandt (*Annales de la Société de Médecine de Gand*, quoted in *Paris Médical*, March 30, 1876) made a very careful exploration of the cavity of that viscus by means of the cannula of the capillary trocar which he had inserted in the hypogastric region. We have here, says he, a very convenient method, and one which, I think, has not hitherto been employed by any surgeon. It should be of use in cases where the sound, introduced by the urethra, leaves the operator uncertain as to the presence of a calculus in the bladder. No point of the *bas fond* can escape the investigations of the cannula. In doubtful cases, urethral catheterism might be employed conjointly with exploration of the bladder by means of a stylet or cannula introduced by the hypogastrium. We are sure that, by combining these two diagnostic methods, one quite as harmless as the other, no vesical calculus could escape the search of the surgeon.

TILLAUX ON TORSION OF ARTERIES.—The following are the conclusions arrived at by M. Tillaux in a paper recently read before the Société de Chirurgie, on torsion of arteries (*Paris Médical*, March 30, 1876). 1. Torsion is applicable to arteries of all calibres, especially to large arteries. 2. A single forceps is necessary for this operation, whatever be the size of the artery. 3. The arteries must be seized obliquely by the forceps, and not in their continuity, so as to get between the jaws of the forceps the three coats in all their extent. 4. Twisting must be

continued to complete detachment of the part seized by the forceps. 5. The folding of the coats towards the heart advised by Amussat and English surgeons is useless. 6. Torsion is applicable to atheromatous or inflamed arteries. It is a precious means of obtaining hæmostasis at the bottom of wounds. 7. It favours immediate union of wounds by the absence of any foreign body. 8. As well as the ligature, it forms a safeguard against primary hæmorrhages. 9. Better than the ligature, it prevents secondary hæmorrhages. Since 1871, M. Tillaux has exclusively employed torsion after small and great operations. He has never had primary or secondary hæmorrhage in about a hundred great operations in which he has practised it.

KUHN ON A NEW METHOD OF REDUCING DISLOCATIONS OF THE SHOULDER.—In the *Gazette Médicale de Paris* (quoted in the *Paris Médical*, March 9, 1876) Dr. Kuhn, of Elbeuf, describes a new method of reducing dislocations of the shoulder. He says it is impossible to ignore the difficulties which often attend the reduction of dislocations of the shoulder. These difficulties are partly owing to the fact that the scapula follows the traction made on the humerus, which causes a loss of a large part of the force employed for the stretching of the muscles.

By adopting the reverse method, that is to say, by applying the force to the scapula whilst the humerus is the fixed point, we no longer reduce the humerus; on the contrary, we fix it and reduce the scapula. There is no loss of power, as it is easy to prevent the arm from following the scapula. The difficulty which is found in reducing these dislocations, however, arises not only from the mobility of the scapula, but also from the power of the muscles, which it is necessary to put on the stretch. It is easy to see that, by this new method of operating, we shall not have to overcome the resistance of the pectoralis major and latissimus dorsi, but of the scapulo-humeral muscles (subscapularis, supraspinatus and infraspinatus, and teres major and minor), which are much smaller and less powerful than the former.

Since the discovery of anæsthetics, we can overcome the resistance of muscles, by chloroform and ether, the administration of which ought to be pushed until relaxation of muscles is produced. Many practitioners, however, are opposed to the use of these sometimes dangerous means for an operation generally so little serious as the reduction of a simple dislocation of the shoulder.

By following out these principles it is possible, more often than not, even alone and without assistance, to reduce a dislocation of this nature. A cushion of a conical shape is to be placed in the axilla, the base of the cone being downwards; the surgeon, standing at the patient's side, lightly draws the arm downwards, and at the same time presses it firmly against the pad in the axilla, so as to make it into a lever of the first kind. Then, taking the inferior angle of the scapula in the other hand, he raises that bone and gives it a see-saw motion. Coaptation soon follows, the two parts returning to their natural position, by a simultaneous effort made on the lower extremity of the humerus and the inferior angle of the scapula. If the head of the humerus be displaced, forwards, the angle of the scapula should be directed outwards, at the same time that it is raised. It should be directed inwards if the dislocation be backwards. If any difficulty be experienced in making

the reduction, the task of holding and directing the arm should be confided to an assistant.

W. DOUGLAS HEMMING.

NUSSEBAUM ON THE TREATMENT OF CENTRAL LESIONS BY NERVE-STRETCHING.—In 1872, Professor von Nussbaum published his first case in which nerve-lesions, such as tonic spasm and pain, in a limb, due to peripheral irritation, had been treated successfully by exposing the main trunks of the irritated nerves and stretching these with considerable force. In the following case, reported in the *Aerztliches Intelligenz-Blatt*, no. 8, 1876, the nervous irritation was due to a central and not to a peripheral lesion. The patient, a Polish gentleman, aged thirty-five years, had for eleven years suffered from paraplegia, consequent on a fall in which the sacral region was much injured. During this period, there had been partial loss of sensation and total absence of voluntary movements. The bladder and rectum had remained paralysed, and there had been a continuous dribbling of urine. When the patient applied to Professor von Nussbaum, the skin over both buttocks and over both sides of the pelvis was marked by large depressed cicatrices from former bed-sores. The patient during the whole period of his illness had been much tormented by almost constant tonic spasms of both lower limbs, through which the knees had often been dragged up to the front of the chest. Chloroform having been administered, the following operations were performed with careful attention to all the details of the antiseptic method. A curved incision was first made in the right groin over and along the course of Poupert's ligament. The fascia having been carefully divided, the anterior crural nerve was exposed and separated from the vein and artery. The operator's finger was then hooked under the nerve so as to elevate it with such force that the right foot was moved. The nerve was then seized between the finger and thumb, and pulled downwards until it appeared to have been elongated. The inguinal wound having been carefully dressed, a longitudinal incision was made on the same side midway between the tuber ischii and the great trochanter, so as to expose the sciatic nerve, which was also elevated from its bed and pulled forcibly upwards and downwards. These operations were followed by immediate cessation of the spasmodic movements of the right limb. The wounds having healed rapidly, similar operations were performed at the end of a fortnight on the left side, where both the anterior crural and the sciatic nerves were exposed and stretched. The relief afforded by this treatment is stated to have been complete and permanent; and the patient, who for many years past had been always kept to his bed was subsequently able to get up and to move about on crutches, the paralysed limbs being furnished with mechanical support.

SCHAEFFER ON LITHIASIS PREPUTII.—Dr. Max Schaeffer of Bremen reports (*Deutsche Medicinische Wochenschrift*, no. 11, 1876), a case of this rare complication of congenital phimosis. When the preputial orifice is very small, smegma, epithelial scales, and urinary deposits, collected in large quantities about the corona glandis, may become dry and form hard concretions, the so-called preputial calculi, which give rise to excoriation and ulceration of the mucous membrane of the glans and of the inner surface of the foreskin, and ultimately to profuse and persistent suppuration. In some exceptional in-

stances these calculi may accumulate to such an extent as to surround the glans, to impair micturition, and to form a large tumour at the extremity of the penis. Dr. Schaeffer's patient was a peasant of the age of forty-six years, who had had difficulty in passing his urine since childhood, and had noticed for several years the gradual growth of a tumour over the glans. Dr. Schaeffer, on examining the penis of this man, found at its extremity a hard tumour of the size of a small apple, and covered by tense and glossy integument. When this swelling was compressed and moved from side to side, a noise was heard as of closely applied small stones being rubbed together. The preputial orifice could not be readily found, as the tense skin was studded with numerous orifices having intensely inflamed and excoriated margins; and when the orifice had been found, even a very small probe could not be passed through it for more than one centimetre of its extent. On firm digital compression of the tumour, urine could be forced out in drops from all the fistulous openings. The patient complained very much of the difficulty he experienced in passing urine, the process occupying each time about a quarter of an hour and being attended with much pain. The case having been diagnosed as one of congenital phimosis and consecutive preputial calculi, a long incision was made from behind forwards through the upper part of the distended prepuce. Forty calculi varying much in size were then removed, together with a quantity of calcareous powder. The calculi taken collectively weighed eleven grammes, and the largest calculi weighed one gramme. The surfaces of most of these calculi were marked by smooth facettes. Each calculus consisted of a nucleus of uric acid and a cortical portion of phosphatic deposits. The cluster of calculi had been before removal traversed by strong fibrous bands, which were the remains of the ulcerated inner layer of the prepuce. The glans penis had undergone atrophy through long-continued pressure; its mucous membrane was quite sound, and presented no signs either of recent or of old ulceration. The urethral orifice was very small. After the removal of the calculi, Roser's operation for phimosis was performed. The constriction at the extremity of the urethra was subsequently treated with complete success by continuous dilatation with an elastic catheter. The patient made a speedy and good recovery.

VOLKMANN ON THE OPERATIVE TREATMENT OF PREPATELLAR HYGROMA.—In the third number of the *Berliner Klinische Wochenschrift* of this year, will be found a contribution from Professor Volkmann, giving the results of this surgeon's experiences of the treatment of hydrocele by simple incision under antiseptic conditions and with subsequent antiseptic dressings. In no. 8 of the same journal, Dr. Volkmann describes the invariably good results obtained by a similar treatment of enlarged prepatellar bursa. Exposure of this sac by incision the author states, has hitherto almost always been followed by severe local reaction, analogous in its intensity and its reaction to the attack which usually results from slitting-up of the tunica vaginalis in cases of hydrocele. There is intense inflammatory action followed by profuse suppuration, and the healing process is very tardy. According to Heinecke, recovery after this operation is not to be expected until the end of five or six weeks. Cicatrisation is often interfered with by parabursal suppuration and

phlegmon about the knee, which render necessary repeated incision. These unfavourable results are most frequently observed after the single incision. Heinecke holds that partial extirpation of the affected bursal sac is a less hazardous operation; but this latter proceeding cannot be performed without reluctance, and so the attempts that are usually made to remove the swelling consist either in injection of tincture of iodine or in forcible compression. Volkmann reports six cases, which show that, where the sac-wall is not thickened or sclerosed, an enlarged bursa patellæ may be readily and safely treated by incision, when the wound is made under the carbolic acid spray and afterwards carefully dressed according to Mr. Lister's instructions. In not a single case did any suppuration follow the operation, nor did any phlegmon or inflammatory action appear on the soft parts about the knee. After the incision and removal of the fluid, the sac is injected with a weak solution of carbolic acid, and then occluded by firm pressure. During the after-treatment, the whole limb is kept at rest on a long splint. After a period of from eight to ten days, during which the wound has been dressed three or four times, the healing process is usually so far advanced that the only application required is a simple stimulating lotion, and in the course of the third week the patient may, in most instances, be regarded as cured. In cases of acute suppurative bursitis, rapid plastic occlusion of the sac may be effected by similar treatment, and the more readily when the patient has applied for treatment at an early stage, and before perforation of the wall of the sac and the development of parabursal phlegmon. Under the last-mentioned conditions, a favourable result of such treatment may often be attained, and not only the suppurating bursa, but also all its suppurating pouches may, according to Dr. Volkmann, undergo plastic occlusion after slitting up, injection with carbolic acid in solution, and drainage.

W. JOHNSON SMITH.

CZERNY ON THYROTOMY.—Professor Czerny (*Wiener Medizinische Wochenschrift*, February 26, March 4), publishes a very interesting case of thyrotomy. He commences by observing that the difficulty in selecting a particular mode of treatment becomes more difficult as the number of methods increases. Till 1860, tumours could only be removed by Desault's plan of thyrotomy, whilst now the endolaryngeal methods of laryngoscopists, subhyoid laryngotomy, and extirpation of the larynx, are practised. He states that 'he has nothing to say against the limitation, by Dr. Mackenzie, of the operation to those cases where an experienced laryngoscopist declares the removal by the mouth impossible, and he would not think of effecting extirpation by a wound in the neck until he had made persevering efforts to remove the growth by the mouth.' Although Dr. Czerny has several times removed growths in difficult cases *per vias naturales*, he admits that in one instance, in which he had recommended subhyoid laryngotomy, Scheck subsequently removed the new formation through the mouth by means of a galvanocaustic snare. Dr. Czerny would have been inconsolable at such a result had not a laryngoscopist, whom all the world acknowledges as an authority, also recommended the operation by the neck. Dr. Czerny thinks that this case tends to show that we are not at present in a position to draw statistical conclusions as to the most suitable operation, any

more than we can determine the duration of treatment, result to breathing and voice, and chance of recurrence, from the different surgical processes. The author considers that Dr. Trendelenburg's plan of plugging the trachea has rendered it safe to produce more complete narcosis in operating, and has thus tended to reduce the mortality, already small, and to diminish the chance of recurrence by permitting more complete removal. The author also believes that the disposition to recurrence is greatly reduced by washing out the larynx with a strong solution of perchloride of iron (30 per cent.) after it has been laid open.

If the statistics of published cases of thyrotomy be compared with those treated by endolaryngeal methods, a great number of children will be found in the first category, and very few in the second. Out of 239 cases whose ages are given by Mackenzie as treated by endolaryngeal methods, only eight (3·3 per cent.) were under ten years, whilst of forty-three patients thyrotomised fourteen (33·1 per cent.) were under ten years of age. The facts appear to prove that one set of cases are suitable for thyrotomy and another for the endolaryngeal method. The case which called forth Dr. Czerny's remarks was a boy seven years old, brought under the professor's notice on September 12, 1874. The patient had suffered for two years from hoarseness and dyspnoea, attributed to the pressure of a fibro-cystic bronchocele. Puncture and emptying the cyst caused no diminution of the dyspnoea; but after great difficulty a laryngoscopic examination was made, and the entrance of the larynx was seen to be blocked up with greyish-red granulations. Under treatment based on the supposition that the disease might be hereditary syphilis, the child improved remarkably in every respect, and on October 18, the right tonsil, which was greatly hypertrophied, was removed. A more complete view of the larynx was afterwards obtained, and the whole circumference of its orifice, from the sides of the epiglottis along the ary-epiglottic folds to the posterior commissure, was seen to be covered with vegetations. As the little patient often suffered from attacks of suffocation and was generally cyanotic, Dr. Czerny performed tracheotomy on December 7. Bronchitis supervened on the 22nd, but the boy ultimately made a good recovery and returned home. In May, 1875, the thyroid cyst was cured by an injection of iodine, and the most persevering efforts to remove the growth by endolaryngeal methods having failed, thyrotomy was performed August 2, 1875. Owing to the small amount of space at command it was found impossible to use the only specimen of Trendelenburg's tampon-cannula at hand, and the passage of blood down the trachea was prevented by previously tying soft sponge round the ordinary tracheal cannula. Chloroform was administered by the cannula, and the larynx was opened in the usual way. The whole cavity of the larynx above and below the vocal cords was seen to be covered with vegetations, which were removed with forceps and scissors. The raw surface was then swabbed with perchloride of iron, and subsequently the larynx was washed with carbolised water (2 per cent.). No sutures were used either to the cartilage or to the external wound, which was merely brought together with strapping. The wound healed in fourteen days without any fever or suppuration. In September the cannula was removed, as the breathing was good through the larynx. The laryngeal hyperæmia was treated by local application of tannate of glycerine, and afterwards with solution of nitrate of

silver. On October 20, the boy was discharged, speaking in 'a loud, but deep and rough voice.' On December 4, the patient was seen again; his breathing was perfect and his voice loud, though rough and uncertain. With the mirror the vocal cords were seen to be red, but perfectly mobile; the right cord was smooth, but there was a swelling of the size of a split pea covering the posterior third of the left cord. The author considers that the danger of the recurrence of diffuse papilloma is in a great measure removed, but should the small tumour grow, the boy would probably be sensible enough to permit endolaryngeal treatment; otherwise Dr. Czerny would not hesitate to repeat the operation as has often been done before. The extirpated papilloma consisted of a richly ramified areolar tissue, at some parts abounding in nuclei, at others more resembling a mytoma. [Dr. Czerny is to be congratulated on his successful management of this troublesome case. The presence of the bronchocele caused a complication in diagnosis and considerable difficulty in treatment, which was overcome by great skill and perseverance. It is to be feared, however, from the report of the present condition, that a recurrence will take place. Rep.] MORELL MACKENZIE, M.D.

VOLTOLINI ON FRACTURE OF THE BASE OF THE CRANIUM.—Number 1 of the *Monatsschrift für Ohrenheilkunde* for 1876 contains a review, by Voltolini, of cases of cranial fracture, recorded in England by Birkett, Heath, Morris, and Lucas. He thinks that in most of those cases in which what is called cerebro-spinal fluid exudes, and especially in those cases which recover, the fluid does not come from the subarachnoidean space, but from the fractured labyrinth. If, he says, the fluid be cerebro-spinal, there must be a rupture of the dura mater, of itself a dangerous injury, and the tear must gape widely to admit of exudation passing out for any considerable time; and that the latter can occur without any important inflammatory meningeal symptoms, as occurred in the first three cases, he cannot believe. Supposing a rupture in the dura mater, there are two ways by which the cerebro-spinal fluid may make its way into the external meatus; viz. either through the roof of the tympanic cavity into that cavity, and then through the membrana tympani; or the fissure goes through the petrous bone, in which case, if the dura mater and arachnoid be also torn, the fluid of the labyrinth and the cerebro-spinal fluid will both exude. The rapidity with which the lymph of the labyrinth can be renewed is unknown, so that it cannot be determined whence a large amount of fluid comes which flows from the ear. He thinks that the cases of Birkett, Heath, and Morris, which recovered rapidly, were cases of fractured labyrinth; and to prove that the labyrinth may be the seat of important disease without serious implication of the brain, he cites the cases of necrosis of the labyrinth and otitis labyrinthica, in which the whole disease is *extra cavitatem cranii*. He considers it desirable that in such cases a careful note of the acoustic power should be made.

On Mr. Lucas's case, Voltolini makes the following remarks. 'Death came here, as it can come by injuries to the heart. I once shot a deer with small shot, at about eighty or ninety paces. It ran in full swing about 2,000 paces, and then fell dead. On examining it, the only wound I could find was in the heart, into the substance of which a single small shot had entered, and thence bleeding into the peri-

cardium had ensued, which gradually becoming filled, brought the heart to a standstill, and death suddenly followed. It was even so in Mr. Lucas's case, through the pressure on the brain by the increasing bleeding between the dura mater and bone.'

W. LAIDLAW PURVES.

LEVIS ON THE PREVENTION OF PAIN AFTER APPLICATION OF THE ACTUAL CAUTERY.—Dr. R. J. Levis, Surgeon to the Pennsylvania Hospital, writes in the *Philadelphia Medical Times* for March 15, that, though the local anæsthetic action of carbolic acid has been for some time recognised by surgeons, no important practical applications appear to have been deduced, and its great powers in that direction seem not to have generally impressed the profession. He has been in the habit of taking advantage of this remarkable property of carbolic acid in his frequent resort to the actual cautery, with the result of the most complete avoidance of consequent suffering. His practice is to apply pure carbolic acid on and for a short distance around each point of application of the cautery, before the patient recovers from the influence of the general anæsthetic which has been used. For convenience of application, the crystals of carbolic acid are deliquesced by warmth, and the liquid applied with a brush. The part is then covered with any light dressing. Should pain recur after extensive or deep use of the cautery, the application may be renewed; but he has not, in his experience, found such resort necessary. Since the fact of the local anæsthetic action of carbolic acid has been familiar to him, he has more frequently used the actual cautery in surgical practice than formerly, particularly in neuralgic suffering and in chronic painful affections of joints, and always with freedom from suffering and with satisfactory results.

BESSEY ON THE REMOVAL OF A LYMPHOMA FROM THE RIGHT SIDE OF THE NECK.—Dr. William E. Bessey, in a paper read before the Medico-Chirurgical Society of Montreal (*Canada Medical Record*, March), describes the following case. This tumour had existed for a period of about sixteen years, gradually increasing in size, and at times becoming considerably swollen, and causing pain in the head, ringing in the ear, and aching in the arm of that side, with a feeling of tightness about the throat. It occupied the superior portion of the right posterior triangular space, and projected into the superior carotid triangle, lying upon the sterno-mastoid, and covering the chain of lymphatic glands along the posterior border of this muscle (it was made up of three of these glands hypertrophied), and was covered in by the fibres of the platysma myoides spread out to an aponeurosis. Its long axis was in a line with the fibres of the sterno-mastoid, and was crossed above by the posterior auricular, and a superficial cervical branch. The external jugular vein lay in immediate contact with it underneath, being in a sort of niche on its under surface, its fundus dipping down well into the superior carotid triangle. Its length was about six inches, its breadth about four inches, and it was very movable. The patient was a stout-built florid Frenchman, about forty years of age. Having chloroformed the patient, Dr. Bessey made a free incision along the posterior aspect of the body, and, getting at it from behind, enucleated it slowly. The adhesions to the surrounding structure were very extensive, and the small blood-vessels feeding it numerous. No vessel

sufficiently large to require ligatures was met with. By proceeding cautiously, examining each mass of adhesions before severing, and working with the fingers, he succeeded in loosening it, step by step, from the neighbouring glands, the subjacent muscle, the external jugular vein over which it lay in direct contact, and finally succeeded in removing it from its adhesions in the superior carotid space without any injury or accident occurring to any important part or blood-vessel in the neighbourhood. Thirty minutes were occupied in its removal, without any untoward circumstance occurring to complicate the operation.

The parts having been approximated, simple water-dressings completed the treatment, and an excellent recovery followed in a fortnight, with, however, some slight numbness in the right hand and arm. The growth, on examination by Dr. Osler, was found to be an adenoid tumour of the cervical lymphatic glands.

BUCK ON THE MIGRATION OF PURULENT MATTER.—In a paper read before the New York Academy of Medicine, and published in the *Richmond and Louisville Medical Journal* for March, 1876, Dr. Gordon Buck makes the following remarks on the conditions on which the migration of purulent matter depends, as regards the parietes of the lower abdominal and pelvic cavities. If we carefully consider the distribution of the peritoneum where it lines the parietes of the lower abdominal and pelvic cavities, we find it in the lumbar region covering the anterior surface of the psoas magnus muscle, and thence spreading out inferiorly and laterally over the iliac fossa, and further down over the walls of the pelvic cavity. In all these regions, as well as in the contiguous hypogastric and inguinal regions, this membrane adheres loosely to the surfaces which it covers, by means of a delicate connective tissue interspersed scantily with a fine adipose tissue, and can readily be detached by pressure with the ends of the fingers alone without the aid of a scalpel. The slight resistance to its spreading which supuration would encounter on this anatomical plane favours the migration of pus to a distant point, especially if aided by gravitation. This anatomical peculiarity also serves as a protection to the peritoneal cavity itself against ulcerative perforation of the membrane. On this same plane, migrating pus would gain access to the track by which the great sciatic nerve and vessels pass out through the ischiatic notch into the gluteal region. A further illustration of this subject is furnished in the case of what is known as psoas abscess, where supuration takes place in the lumbar or dorsal region of the spine, and depends on caries of the vertebrae. Aided by gravitation the pus follows the psoas muscle, and in its descent may take either one of two directions.

1. By pressing behind the iliac fascia, it may accumulate in the iliac fossa and make its way behind the outer half of Poupart's ligament, distending and elevating it in some degree, and then may arrive upon the upper part of the thigh, below the outer half of Poupart's ligament, where it presents a more or less extensive, elastic and fluctuating swelling. Continuing along the course of the iliacus and psoas muscles, the matter may burrow its way on even to the region of the hip joint.

2. Purulent matter in its descent from the lumbar region, instead of passing behind the iliac fascia, may keep in front of and between it and the peri-

toneum, and accompany the femoral vessels in their passage from the pelvis, behind the inner half of Poupart's ligament. In this case, a superficial sub-fascial swelling may form on the anterior aspect of the thigh, below the inner half of Poupart's ligament. Another point at which matter may make its escape from the pelvic cavity is in company with the obturator vessels as they traverse the obturator foramen, at its upper margin where the obturator membrane is wanting. In this case the accumulated matter makes room for itself among the abductor muscles, and forms a bulging elastic tumour on the inner aspect of the thigh close to the perinæum.

RECENT PAPERS.

- Chronic Abscesses of the Thoracic Walls. By M. Duplay. (*Le Progrès Médical*, July 1.)
 On a Case of Diaphragmatic Hernia. By Dr. G. Linoli. (*Lo Sperimentale*, June, 1876.)
 Extirpation of a Serous Cyst of the Left Axilla. By Dr. A. Spediacci. (*Ibid.*)
 Resection of both Hip-Joints for Bilateral Hip Disease in a Child Seven Years Old: Recovery. By Dr. R. Volkmann. (*Deutsche Medizinische Wochenschrift*, June 24.)
 A Case of Laryngo-Tracheal Ozena. By Dr. B. Baginsky. (*Ibid.*)
 Fracture of Radius and Ulna; T-Shaped Fracture of the Lower Epiphysis of the Humerus; Complicated Luxation of the Radius: Recovery. By Dr. Von Mosengeil. (*Berliner Klinische Wochenschrift*, June 19 and 26.)
 The Treatment of Hypertrophy of the Prostate. By Dr. Dittel. (*Wiener Medizinische Wochenschrift*, May 27, June 3 and 10.)
 On Incomplete Dislocation of both Forearms outwards. By Dr. K. Nicoladoni. (*Ibid.* June 3 and 10.)
 The Union of Gunshot-Wounds. By Dr. Köberle. (*Allgemeine Wiener Medizinische Zeitung*, June 13 and 20.)
 On the Use of the Carbolic Jute Dressing. By Dr. R. Köhler. (*Deutsche Medizinische Wochenschrift*, June 3 and 10.)
 Resection of a Considerable Portion of the Sacrum, with Opening of the Spinal Canal, in a Case of Central Osseous Sarcoma: Recovery. By Dr. R. Volkmann. (*Deutsche Medizinische Wochenschrift*, June 17.)
 Epithelioma of the Skin and Consecutive Erysipelas. By Dr. Béhier. (*L'Union Médicale*, June 1.)
 On a Case of Osteomalacia. By M. Mondan. (*Lyon Médical*, May 28.)
 Fracture of the Lower Extremity of the Femur: Cure. By M. Trélat. (*L'Union Médicale*, June 6.)
 On Some Specialities in Umbilical Hernia. By M. Gosselin. (*La France Médicale*, June 7.)

MATERIA MEDICA AND THERAPEUTICS.

EBSTEIN ON THE TREATMENT OF DIABETES MELLITUS BY SALICYLATE OF SODA.—Professor Ebstein, of Göttingen, reports the following cases in the *Berliner Klinische Wochenschrift*, for June 12, 1876, no. 24. He first alludes to the success obtained by Müller and himself in some cases of diabetes by the use of carbolic acid (see no. 49 of the same journal for 1873, and no. 5 for 1875). He strongly urges that diabetes is simply a symptom of very different pathological processes; and as its cause may differ, so various remedies may be used, and may succeed at different times. The chemical relations of carbolic acid and of salicylic acid induced them to make trial of the latter. This trial was not successful (perhaps because the dose was too small, only 0.3 to 0.5 gramme = $4\frac{1}{2}$ to $7\frac{1}{2}$ grains per diem being given). In this case only a trace of carbolic acid, into which it was supposed the other was decom-

posed, could be detected in the urine distilled with hydrochloric acid, by adding bromine solution to the distillate. After the salicylic acid failed, carbolic acid proved completely successful, the patient being cured by it. The present paper relates the history of two cases of diabetes, in the first of which carbolic acid and other remedies proved unsatisfactory, but salicylate of soda completely removed the diabetic symptoms; while, in the second case, there was considerable improvement from the same remedy.

Case 1. Ludwig F., of Göttingen, a brushmaker, aged fifty-eight, came under treatment on December 26, 1875. Except for a nervous fever twenty-five years previously, his health had been good in early life. After this fever, especially of late, he had suffered from transitory attacks of vertigo. There was no history of diabetes nor of neuroses in his family. For the last fourteen days, without obvious cause, he had increased thirst, increased flow of urine, great weakness, and prostration. For some days he suffered pain in the course of both sciatic

nerves, the tender points corresponding to the exit of these nerves from the pelvis. These pains vanished in less than a week after blistering. Sleep was imperfect, since the patient was forced to pass water every two hours. He was of medium size, and powerful build, with moderate corpulence, rapidly diminishing since the attack. His muscles were flabby and wasted. He had a sweetish insipid taste in the mouth, and his appetite was bad. Thirst was greatly increased. Bowels regular. No dyspepsia was complained of. The tongue was slightly coated. Physical examination of chest and abdomen only disclosed dulness without alteration of breath-sounds at the apex of the right lung. On December 27 he passed quite nine pints of urine in twenty-four hours, of sp. gr. 1.030, with 6,236.2 grains of sugar. No inosite was found by Cooper Lane's process.

The following table (abridged by the omission of maxima and minima from the one given by Ebstein in the original) will give an idea of the different modes of treatment resorted to in this case, and the various results obtained.

Date	Quantity of Urine in twenty-four hours, with its Specific Gravity	Sugar eliminated in twenty-four hours	Treatment and Diet	Results
1.—Dec. 28, 1875, to Jan. 2, 1876. (Six days)	4258 c.c. = 6½ pints. Sp. gr. 1031. The maximum was 9 pints	191.1 grammes = 2938.6 grains	15½ grains of carbolic acid dissolved in 300 times that quantity of water to be used in three days. Diet nearly all starchy; potatoes and bread	Considerable reduction of sugar. No change in quantity of urine or sp. gr.
2.—Jan. 3 to 14, 1876. (Twelve days)	1603 c.c. = 2½ pints. Sp. gr. 1025. Maximum = 90 ozs.	45.2 grammes = 697.5 grains	Same drug. Exclusively milk diet (well borne by stomach)	Very considerable improvement in all the symptoms
3.—Jan. 15 to 27, 1876. (Thirteen days)	2684 c.c. = 84 ozs. Sp. gr. = 1033. Maximum, 5 pints	136.4 grammes = 2106 grains	Treatment same as regards carbolic acid, now made 7½ grs. per diem. Mixed diet without potatoes. Milk diet refused by the patient	Not so good as 2, though better than 1. Perhaps from not allowing potatoes
4.—Jan. 28 to Feb. 10, 1876. (Fourteen days)	3141 c.c. = 98 ozs. Sp. gr. 1030. Maximum 6 pints	174.9 grammes = 2700.5 grains	Daily one flask of Carlsbad water. Mühlbrunnen (natural spring.) The same diet	A little better than No. 1
5.—Feb. 11 to 17, 1876. (Seven days)	3241 c.c. = 101 ozs. Sp. gr. 1032	169.1 grammes = 2463 grains	7½ grains carbolic acid per diem. Same diet	Similar. Carbolic acid showed no striking results
6.—Feb. 18 to 29, 1876. (Twelve days)	1429 c.c. = 45 ozs. nearly. Sp. gr. 1026. Maximum 56 ozs.	25.9 grammes = 400 grains. The minimum was total absence of sugar.	77 grains of salicylate of soda per diem in three doses [154 grains on first day produced vertigo, faint feelings, and noises in ears.] Same diet	Rapid improvement and vanishing of all the diabetic symptoms

Professor Ebstein appends the following table of the daily quantities of urine and sugar from the very commencement of the treatment by salicylate of soda. [It has not been thought necessary to convert the weights, as the results show equally well in the original form.—*Ref.*]

	C.c.	Grammes.
Feb. 17 . . .	3675	with 190.8 of sugar per diem.
" 18 . . .	1800	" 77.4 " "

	C.c.	Grammes.
Feb. 19 . . .	1800	with 64.8 of sugar per diem.
" 20 . . .	1800	" 64.8 " "
" 21 . . .	1300	" 44.2 " "
" 22 . . .	1575	" 51.8 " "
" 23 . . .	1300	" 13.1 " "
" 24 . . .	1575	" 21.9 " "
" 25 . . .	1300	" Traces " "
" 26 . . .	1300	" 1.7 " "
" 27 . . .	1300	" Traces " "
" 28 . . .	1300	" Do. " "
" 29 . . .	1300	" None at all " "

From this time no more sugar appeared in the urine, and the patient gained weight and strength. He had had boils in January. No sugar was observed in the pus of these boils. In a note we are told, under date of May 30, 1876, that the patient takes a mixed diet, and continues to gain weight, the urine being quite free from sugar, and not excessive. By way of precaution he takes fifteen and a half grains of the salicylate of soda daily even now.

Case 2. In the second case, a merchant, aged fifty-three, had suffered from diabetes from 1867. He was rather a scrofulous child; had a 'sort of brain-inflammation' in 1847, when a student; and in 1866 a severe inflammation of the cæcum. The diabetes came on some months later with lassitude, and pains in the region of the kidneys. Thirst was increased, but hunger was never very immoderate. In 1871 the patient recovered from a severe pneumonia; some years previously he had a sharp attack of dysentery. From the beginning of the attack to the spring of 1875, the daily quantity of urine was about four pounds in twenty-four hours; since then it rose to about seven pounds. Till 1871 the percentage of sugar was about $1\frac{1}{2}$ to 23. In 1874 the sugar rose to 4 per cent. In 1875 to 5.8 per cent. Carlsbad, in 1871 and 1874, and Neuenahr, in 1872, 1873, and 1875, never completely cured him of the glycosuria, though he was always better for these 'cures.' For some time he had taken 'Uslar's syrup,' which contains iron. The patient was bald, and suffered from seminal emissions. Present weight 153 pounds; sleep bad; dreams disturbing; crawling feelings in limbs. On December 21 he was taking mixed diet with potatoes, passing 109 ounces of urine in twenty-four hours with 4 per cent. of sugar in the day, and 4.3 per cent. at night. Ebstein says that diabetic diet at once reduced the quantity of urine to seventy-eight ounces, and the percentage of day urine to 1.8, of the night to 2.9 per cent., the total quantity of sugar being about 13 ounces. He disliked this diet, and soon left it off, but was persuaded to give up potatoes. He was then placed upon carbolic acid, with only slight benefit. He was therefore placed upon salicylate of soda, at first in doses of ten grammes (155 grains nearly) per diem. This quantity, however, produced similar unpleasant feelings to those mentioned in the former case. It was therefore reduced to one-fourth that quantity, and afterwards increased to forty-six grains per diem. Under the use of this, the urine was reduced to nearly normal (sixty-four ounces per diem), and the sugar reduced to half its former quantity. He also gained weight, but was not cured. W. BATHURST WOODMAN.

SÉE ON THE TREATMENT OF ANGINA PECTORIS.—The *Moniteur Thérapeutique* gives an account (quoted in *Paris Médical*, April 13, 1876) of some recent observations of Professor Sée on angina pectoris. According to him, this affection is not a neurosis, but an ischaemia combined with pain. The treatment should therefore be twofold. As the pain, which by its violence stops the breathing, can kill the patient in a few minutes, it is to it that we must first address ourselves when called during an attack; and we must not trust to ordinary means, which would probably act too slowly; we must immediately administer a hypodermic injection of one to two centigrammes (0.15 to 0.3 grain) of morphia. This injection, moreover, should be repeated one to three times a day, and continued at least twice in the twenty-four hours, for some weeks,

until the attack has completely disappeared. Without this we shall see it reappear, and shall lose all the benefit of the remedy.

With respect to the ischaemia which we are about to mention. The morphia acts not only by suppressing the pain; it assists the circulation also, and thus directly addresses itself to the ischaemia which, stopping the heart from receiving sufficient blood, it causes to lessen. Together with these morphia injections, we ought to give chloral enemata. By the mouth this remedy will not be borne in these cases, and it seems besides to be more easily absorbed by the rectum. This is the formula of M. Sée:— \mathcal{R} Chloral, 2 to 3 grammes; mucilage, q.s.; water, 150 grammes. Make an enema. Chloroform should be completely banished from the treatment of angina pectoris, because it favours arrest of the heart. Nitrite of amyl has no action as a sedative, but it may perhaps be useful, because it dilates the vessels. Belladonna produces no effect; and as for antispasmodics, they are absurd in a case so serious and urgent. Acetate of ammonia has a certain value as an excitant of the circulation, and because it acts at the same time on the respiration; but it is not so valuable as the morphia. External measures, as cupping, heat, frictions, etc., have no value; nevertheless, we are sometimes obliged to use them in deference to prejudice. To prevent a return of the attack, we must have recourse to bromide of potassium or digitalis. During the attack the use of bromide would be absurd, because it contracts the vessels instead of dilating them; besides, its action would be too slow; but in the interval it serves, like digitalis, as a regulator of the circulation and the respiration. Arsenic, much vaunted, does no good. Hydrotherapy is highly dangerous, and its employment can only be explained on the idea that we had a neurosis to deal with. With this method of treatment, either a return of the attack or cerebral congestion is to be feared.

LA SALUTE ON A POWDER FOR THE PREVENTION OF CICATRICES FROM VARIOLOUS PUSTULES.—The author in this paper (*Paris Médical*, June 1, 1876, from *La France Médicale*) says he has proved in many cases the good effects of a powder composed of four parts of flowers of sulphur and one part of red precipitate. He has been able by the aid of this topical application to prevent the formation of evident cicatrices on the face of a variolous patient. He was led to the application of this mixture in cases of confluent small-pox, by the success which he had obtained with it in many forms of disease of the skin, particularly eczema and acne. This powder should be placed on a slight layer of glycerine previously spread on the pustules which have come to the point of suppuration. The glycerine ensures the adhesion of the powder, which dries it up, forms a crust, and falls off, leaving the skin free from cicatrices.

HIRTZ ON THE ACTION OF REMEDIES.—M. Hirtz has just published, in the *Bulletin de Thérapeutique*, a remarkable article on this subject. It may be summarised as follows (*Paris Médical*, June 1, 1876). The disease must not be considered as a concrete body, superadded to the organism, nor even as a lesion, but as a physiological act, perverted from the normal type. The remedy should be considered as a substance or agent, capable of bringing back to the normal type the perverted organic function.

Consequently, the virtual value of a remedy ought to be deduced not from the disease, as a whole, nor from the 'brutal and unintelligent' fact of the cure or final insuccess, but from its modifying action on such organs or such a function, or (exceptionally in the case of specifics) from its clinical influence on certain morbid forms. The calculation of dynamic action, the determination of therapeutic action, and the appreciation of the final result, can only rest on these elementary acts. For the formation of a rational, scientific, therapeutic system, a complete knowledge of the physiology of the disease and the physiology of the remedy is necessary in order to modify the one by the other. This method, which may be called analytic therapeutics, is the only true scientific and progressive one; and the other, which takes as its criterion only success or the reverse, constitutes a retrograde, fruitless, therapeutic system, which is called empiricism and mesmerism.

LIMOUSIN ON THE EMPLOYMENT OF SALICYLIC ACID IN THE PREPARATION OF HYPODERMIC INJECTIONS.—M. Limousin recently presented to the Société de Thérapeutique (*Paris Médical*, April 20, 1876) some specimens of solutions for hypodermic injection, prepared according to the method of M. Patrouillard, with distilled water of the spiræa ulmaria. The spiræa ulmaria contains a principle analogous to salicylic acid, and it is to this principle that is probably due the property of preserving unaltered for a longer or shorter time the solution of organic alkaloids. But this article does not always arrest the development of algæ and confervæ. Therefore M. Limousin thought of substituting for it a solution of salicylic acid (1 to 2,000) and has found it work well. A solution of hydrochlorate of quinine in ordinary distilled water at the end of some weeks was full of germs, while another solution of M. Limousin's liquid, made at the same time, was still unaltered. Clinical observations are yet required as to the innocuousness to the cellular tissue of this injection liquid; *a priori*, however, we can imagine that a solution of salicylic acid in the proportion of 1 to 2,000 is altogether harmless. M. Dujardin-Beaumetz employs, as a solvent for the alkaloids, distilled cherry-laurel water; solutions made with this liquid keep well, and have no irritant action on the tissues.

W. DOUGLAS HEMMING.

KLINK ON THE DETECTION OF MERCURY IN HUMAN MILK DURING INUNCTION WITH MERCURIAL OINTMENT.—Dr. Edward Klink relates (*Vierteljahrsschrift für Dermatologie und Syphilis*, 1876, 2 Heft.), the case of a syphilitic woman who was nursing her child, undergoing an inunction cure, during which mercurial ointment was rubbed into the skin twenty-five times. After the thirteenth inunction, milk was taken daily for chemical examination, about eleven ounces altogether being received. The proof that the milk contained mercury was unequivocal. Observers who had come previously to a negative conclusion had employed insufficient methods in the analysis.

In the case of this woman, syphilitic symptoms present in the child disappeared during the inunction treatment.

COCA.—The *Edinburgh Medical Journal* publishes the following curtailed notice of a review of a work on this subject in the *Revista Médica de Chile* for November last. 'In the last number of this review, we mentioned that the Medical Society had

been presented with a beautiful work on this interesting plant by Dr. Manuel A. Espinosa. To-day, having read it attentively, we wish to give a succinct account of it. After a very curious history of the plant in question, which abounds in most interesting data, which reveals in its author great erudition, and a spirit of extensive and conscientious investigation, after a complete and perfect botanical description, and after enumerating the localities in America where it is found or where it is cultivated, he enters into the question of its qualities, which is undoubtedly the part on which he is best qualified to speak, and which is also the most worthy of notice. He cites various analyses of coca leaves, which are made up of, according to Miemann, of cocaine, of a particular kind of wax, tannic acid, solid essential oil, chlorophyll, and woody matter. He does the same with the *llipta* or alkaline matter, which the Indians who use it mix with the coca leaves. This is made into a bolus, which they call *acullico*, and which must be chewed in order to extract from the leaves their active principle. He attributes to the cocaine the effects which the chewed leaf produces on the body. Cocaine is a nitrogenous alkaloid, able to neutralise acids, and which forms with them crystallisable salts, especially with acetic and hydrochloric acids, and whose atomic formula is $C_{16}H_{20}NO_4$, and an equivalent of water. The action which *llipta* produces on the coca is thus perfectly explained; the cocaine existing in a state of combination with organic acids, any alkali or alkaline carbonate will loosen it from its combination, thus favouring its solution in the saliva, and its ultimate absorption. As cocaine is very soluble in alcohol, and especially so in ether, the best pharmaceutical preparation of coca will be the ethereal alcoholic tincture. With the object of making observations worthy of credit, he made experiments on his own person and on a medical student, who willingly lent himself for experimentation. Wishing specially to discover its influence on tissue waste, at the same time they made use of an identical alimentation, and each day carefully observed the quantity and quality of the excretions, specially the pulmonary and the urinary. During the twenty-six days the observations lasted, they noted the temperature of the body and the state of the chief organs. They did not notice the absolute loss of appetite which is attributed to the use of coca, still less the hallucinations, full of poetry, which Dr. Mantegazza has described with as much exaggeration as enthusiasm. Thus, the *coquero*, believing himself transported to a thousand and more diverse worlds, mounted on two leaves of coca, exclaims: 'God is unjust for having made man able to live without coca. I would prefer a life of ten years with coca to one of ten thousand centuries without it.' Neither did they feel that irresistible desire to skip about, which other observers say they have noted, which incited them (according to their own relation,) to jump over the heads of persons round about them. The only thing they could observe with exactitude was a slight headache, a sensation of heat in all the body, and sleeplessness. Their strength and energies seemed to be augmented. The daily examination of the urine, and of the product of the pulmonary exhalations, was an objective point of the experimentation. The quantity of urea in the urine, and of the carbonic acid in the expired air, underwent a notable increase, both phenomena being preceded by acceleration of the pulse and the respiration, and by a slight augmentation of temperature. Dr. Espinosa looks

upon coca as 'a special stimulant of the nervous system, whose gentle and continuous action is quite characteristic.'

RECENT PAPERS.

- On the Homologous Alcohols obtained by Fermentation. By Dr. V. Chironi. (*Lo Sperimentale*, June, 1876.)
 The Local Action of Chloral-Hydrate, and its Application in some External Surgical Diseases, etc. By Dr. G. Tizzoni. (*Ibid.* June, 1876.)
 The Decomposition of Salicylate of Soda. By C. Binz. (*Berliner Klinische Wochenschrift*, July 3.)
 On a New Permanent and Instantaneous Thermo-cautery, Acting with Mineral Essence. By Dr. Pagnelin. (*Bulletin Général de Thérapeutique*, May 30.)
 On the Use of Blisters in Acute Pleurisy. By Dr. J. Besnier. (*Journal de Thérapeutique*, May 25.)
 Experimental Researches on the Antagonism between Alcohol and Strychnine. By Dr. Amagat. (*Ibid.*)
 On the Beneficial Effects of Iodide of Potassium in the Treatment of Meningitis. By M. Dujardin-Beaumetz. (*Bulletin Général de Thérapeutique*, May 30.)
 On the Origin of Phosphate of Lime eliminated by the Urinary and Intestinal Passages, and of the Value of Phosphate as a Therapeutic Agent. By MM. Pagnalin and Jolly. (*Ibid.* June 15.)

TOXICOLOGY.

STEVENSON ON NITRO-BENZOL POISONING.—Dr. Thomas Stevenson has printed the following case in a pamphlet form. It is, as he justly says, almost, if not quite, unique, nitro-benzol having been taken by an adult man, in measured doses, until the full physiological, and well-nigh lethal effects of the poison were produced. The symptoms were well marked, and the delayed or cumulative effects of the liquid were very apparent. The original is accompanied with a lithograph of the prescription, through the misreading of which the case occurred; and also another prescription, written for the same patient by the same physician. They are both curiosities in the way of illegibility. The first of these prescriptions is somewhat of a favourite with the prescriber, and has frequently been misread; the true reading, 'Benzole Rect.,' being sometimes taken for 'Bismuth Nitr.' The patient, Mr. Sydney S—, aged twenty-one, married, consulted a physician in November 1875 for a pain in the chest, troublesome cough, and free expectoration. He had previously been healthy. Strychnine was prescribed as a tonic, and subsequently the following mixture:—

R. Benzole Rect. ʒij
 Ol. Ment. pip. ʒss
 Ol. Olive, ʒ x, gutt. xxx t.d.s.

He was requested to have the medicine dispensed by a particular druggist. This was done, and the cough was relieved. In February he again had occasion to take the medicine, and had it made up at another chemist's, where it was misread, and nitro-benzol given instead of rectified benzol. On February 21, Mr. S— took three doses of thirty drops = 20 minims; on February 22 three more doses, and on the next day one dose at 9 A.M., or in all about 23 minims of nitro-benzol, the interval between the first and last doses being forty-eight hours. On the afternoon of the 22nd, he was observed to look a little pale and weak, but he was not conscious of feeling ill till after taking the final dose at 9 A.M. on the 23rd. All that morning he suffered from headache. At 1 P.M. he had his dinner, after which he

went from the City to Islington, and back again to the City. His fellow-clerks said he looked ill, and advised him to go home. He left the office shortly after 2 P.M., but had not walked more than forty yards, when he fell down. He was just sensible enough to state where his office was situated, but speedily became quite unconscious. Mr. Gross, a student of Guy's Hospital, saw him at 3.15 P.M. He appeared to be dead. The surface was bluish-purple and cold. No pulse could be felt at the wrist. The lower jaw was rigidly closed, but the limbs were flaccid, and dropped powerless when raised. The heart could, however, be heard, beating faintly and irregularly. The pupils were widely dilated. No breathing could be perceived till twenty minutes after Mr. Gross first saw him. Sinapisms, and friction to the limbs were used; and after an hour, when consciousness had partly returned, secondary magneto-electric current was sent through the hands and upper limbs. This brought on vomiting, and seemed to stimulate the heart. The vomited matter smelt strongly of nitro-benzol. It consisted of the remains of an abundant meal. The bowels acted without his consciousness. Between 5 and 6 P.M. he was admitted into Guy's Hospital, under Dr. Moxon. He was then nearly insensible; the pulse was very weak and irregular, and could not be counted. Brandy was administered, and ammonia inhaled. About 7 P.M. he began to be conscious, and could then remember all that occurred before 2 P.M., but nothing subsequently. He also complained of headache. At 9 P.M. the skin was still very blue, and the headache persisted. Pulse very irregular. From this time he made a satisfactory recovery, and by the middle of next day was fairly convalescent. Eight fluid-ounces of the urine, collected on the morning after the onset of violent symptoms, and after convalescence was well established, were agitated with chloroform, and a residue was left after evaporation of the chloroform, smelling strongly of nitro-benzol. When the true nature of the case was recognised, the remainder of the medicine in the bottle was examined, and its composition determined. Dr. Stevenson notes how closely the symptoms approximated to those produced by prussic acid.

W. BATHURST WOODMAN.

RECENT PAPERS.

- The Pathology of Acute Morphia Poisoning and Acute Chloral Poisoning. By Dr. Levinstein. (*Berliner Klinische Wochenschrift*, July 3.)

OPHTHALMOLOGY AND OTOLOGY.

POLITZER ON THE PATHOLOGICAL HISTOLOGY OF THE LINING MEMBRANE OF THE MIDDLE EAR.—Professor Politzer, of Vienna, describes, in the April number of the *Archiv für Ohrenheilkunde*, the appearances he has found in his microscopical examinations of the lining membranes of the middle ear, when suffering from chronic inflammation, with perforation of the tympanic membrane. One preparation showed an extensive net of distended lymphatic vessels, whose varicose turgid branches either crossed or anastomosed with each other, and here and there ended in thick club-like culs-de-sac. The inner walls of these vessels had an epitheloid

lining. In the neighbourhood of these vessels were seen round or oval cyst-like spaces, with a double contoured wall, showing a fibrous structure, and containing cells like lymph-corpuscles. Politzer believes that these vessels have existed in the normal state of the membrane, and are now only distended and changed in form.

In the case of a patient who died of phthisis, after suffering from a chronic otorrhœa, which had caused a high degree of deafness, he found the tympanic cavity filled with a connective tissue growth. A microscopic examination of this growth disclosed a tissue with vessels and cyst-like bodies, similar to those described in the previous paragraph. Sections through the drum, the growth, and the inner wall of the tympanic cavity at different places, showed that at the periphery of the drum the original tissue of which it was composed was separated sharply from the growth, while at the centre of the drum, where there had formerly been a perforation, the true tissue of the membrane failed entirely, but its place was taken up and completely filled by the pathological formation, which at this spot was covered on the external side by several epithelial layers.

W. LAIDLAW PURVES.

LADREIT DE LACHARRIÈRE ON HERPETIC AFFECTIONS OF THE EAR CAUSING DEAFNESS.—Under this title, in the *Annales des Maladies de l'Oreille et du Larynx*, Dr. Ladreit de Lacharrière describes two common maladies—eczema and pityriasis. Eczema manifests itself on the ear in its simple and compound forms, impetiginous eczema and herpetiform eczema. This affection may be recognised by the following characters: redness of the diseased surface; persistent itching; secretion of a lemon-coloured secretion, staining and stiffening the linen; a punctated state of the skin, produced by the inflamed orifices of the canals of the ceruminous glands. This affection, most common in women when very young or at the critical period, causes a deformity of the auricle; causing permanent secretions from the meatus, it provokes an alteration of the walls as far as the surface of the tympanum, and by the swelling may often obstruct the meatus.

Chronic eczema causes at length lesions of the middle and internal ear, and with it deafness, buzzings, musical sounds, and hissings. Eczema is often favoured by lack of hygienic care, want of cleanliness, and is very often respected by parents as being salutary. Consequently it often presents itself as an inveterate affection. Eczema of the ear is particularly obstinate. M. Ladreit de Lacharrière has never seen it disappear spontaneously. When the eczema is acute, warm lotions of marsh-mallow and poppy-heads may be prescribed several times a day. After each of these, a poultice may be applied, of a mixture of equal parts of oil of sweet almonds and oil of henbane. These applications soothe the itching. Frequent saline purgatives may be given. At the end of some days, if the disease tend to pass into a chronic condition, the emollient lotions may be replaced by alkaline lotions; these solutions may be gradually increased in strength, commencing with a teaspoonful of bicarbonate of soda in a glass of warm water.

The author rejects the application of ointments, which stop the discharge of fluids while the disease occupies the auditory canal. For tar he prefers a solution to an ointment, and injects this solution

three times a day. He does not employ starch-powder. If the disease be obstinate, he does not hesitate to treat it by cauterisation. He employs for this purpose the following solution: R Rose water, 30 grammes (about 1 ounce); nitrate of silver, 4 grammes (1 drachm); laudanum, 1 gramme (15 minims). He absolutely forbids the employment of blisters, advocated in eczema, in children; they spread the disease without curing it. The general treatment should always keep pace with the local. All indigestible food must be avoided, and two baths a week of starch and gelatine may be given; in scrofulous subjects, sulphur baths; in rheumatic subjects, alkaline remedies.

Sometimes neither scrofula nor rheumatism is present, but the disease presents a true herpetic character. We must then have recourse to the following remedies: arsenic, iodide of potassium, and mercury. In a vigorous subject, the author prescribes Wendt's powder; R Calomel, 20 centigrammes (3 grains); yellow sulphide of antimony, 20 centigrammes (3 grains); white sugar, 8 grammes (2 drachms). Make into twelve powders; one powder to be taken three times a day.

W. DOUGLAS HEMMING.

RECENT PAPERS.

- On the Diagnosis of Diseases of the Eye. By Dr. E. Landolt. (*Le Progrès Médical*, April 15.)
 Otitis with Vertigo (Menière's Disease.) By Dr. Brochin. (*Gazette des Hôpitaux*, April 15.)
 Granular Conjunctivitis and Intermittent Fever in Algiers. By Dr. Gayat. (*Lyon Médical*, April 30.)
 On the Affections of the Eye in Measles. By Dr. Schmidt Rimpler. (*Berliner Klinische Wochenschrift*, April 10 and 17.)
 International Metric Optometer for the Simultaneous Measurement of Refraction and Visual Acuity, even with those unable to read. By Dr. Badal. (*Annales d'Oculistique*, March and April, 1876.)
 On an Effectual Method of Threading of Suture Needles. By Dr. G. Martin. (*Ibid.*)
 Fracture of a transparent Crystalline in the Anterior Chamber. By Dr. G. Sons. (*Ibid.*)
 Fragments of Ophthalmology. By Dr. Massilon. (*Ibid.*)
 Critical Observations on Ophthalmic Operations. By Dr. V. Santarvecchi. (*Lo Sperimentale*, May.)
 On the Uselessness of Occlusive Dressings after Keratotomy and Sclerotomy. By M. Gayet. (*Lyon Médical*, April 28.)

REPORTS OF FOREIGN SOCIETIES.

MEDICAL SOCIETY OF BERLIN.

January 18, 1876. *Vesical Calculi*.—Dr. Fürstenheim showed some specimens of vesical calculi, taken from a subject on whom he had made a *post mortem* examination. The patient, a man, aged seventy-seven, was first seen by him in November, 1874. He had for several years suffered from vesical catarrh, probably connected with hypertrophy of the prostate, which developed itself more in the direction of the urethra and bladder than of the rectum. Up to 1869 no local treatment was adopted, although the patient was always in a miserable condition from incontinence of urine. After this time the catheter was regularly employed, and injections were made into the bladder. The catarrh, which appeared to have been moderate when the catheter was first used, afterwards increased in spite of every precaution. In the autumn of 1873, while the patient

was catheterising himself with an elastic catheter, a piece more than two inches long broke off, and remained in the bladder. He consulted a well-known surgeon, who (Dr. Fürstenheim thought, wrongly) advised that no attempt at extraction should be made. The patient then endeavoured to find by experiment what would become of the piece of catheter in his bladder; he placed the other portion of the instrument in a vessel filled with his urine, which was renewed daily for a quarter of a year. He found that the catheter was not incrustated with urinary salts, but became brittle, and could be broken down with the finger. The presence of the foreign body soon became manifest in the bladder; and in about a year the patient's suffering had greatly increased. When Dr. Fürstenheim first saw him, in November, 1874, he did not find in the bladder a free smooth piece of catheter, but a rather rough, not hard, movable calculus, having about the length and thickness of a little finger. There could be scarcely any doubt that the piece of catheter was the nucleus of this calculus; and it was evident that it must be broken up within the bladder. Lithotripsy was performed twice in the course of eight days, without anaesthesia, and was very well borne. Only some very small particles of the material of the catheter and some phosphatic gravel were removed by the instrument or washed out of the bladder. The operations were followed by scarcely any constitutional reaction, and the patient felt so much relieved that he believed that he was freed from his trouble. In April, 1875, Dr. Fürstenheim found an immovable stone in the bladder, probably lying in a diverticulum. In December, 1875, the patient died; and a *post mortem* examination was made by Drs. Fürstenheim, Zober, and Cholewa. The bladder was excentrically hypertrophied; there was no ulceration, and the trabeculae were moderately developed. In a small diverticulum was an elongated calculus, one of the rounded ends of which reached to the entrance of the diverticulum. There were also seven calculi in the bladder; four being roundish, about the size of small chestnuts, and three flatter. In addition, there was a larger calculus three centimetres (1·2 inches) long, the nucleus of which was formed by the piece of catheter, a portion of which was apparent at one end. The smaller elongated calculus above mentioned also contained a portion of the catheter; and small particles of it were also found in one of the round stones. Dr. Ewald found the calculi to consist of uric acid and urates in abundance, triple phosphate, cystin, and perhaps also xanthin. The elongated calculi were not so hard as the others, and appeared to consist mostly of phosphates. Dr. Fürstenheim also observed two other calculi; one oval, the other consisting of concentric layers, and explained the differences between them and the other calculi which he exhibited. He said that the differences depended on the constitution of the urine and the consequent chemical composition of the stone, on the shape and kind of the nucleus, on the positions of the calculi with respect to each other when several were present, and on the condition of the bladder. He thought that it would have been scarcely possible for a large oval calculus to form in the bladder of the patient whose case he had described; this was interfered with by the frequent use of the catheter, and there could be no question that the wall of the bladder had an influence on the form of the calculus. He also believed that the composition of the urine depended more on the condition of the bladder in some

circumstances than was generally assumed. It was not only that the urine became stagnant in a paralysed bladder, and became decomposed under the influence of pus, mucus, and blood, but especially when the mucous membrane of the bladder is more or less diseased and ulcerated, there is an interchange of the salts and other matters in the stagnated urine with the saline matters of the fluids present in and between the tissues of the diseased bladder. This change in the urine deserved to be made the subject of experiment; but it must affect the composition of the stone in course of formation. As regards the removal of foreign bodies from the bladder, statistics had been collected by Civiale, Denucé, and Porta; the general conclusion derivable from which was, that we should not hesitate to attempt the removal through the natural passages or through a fistulous opening if one were present, unless any strong contraindication existed, such as inflammation of the urinary organs. Of 391 cases collected in twenty years by Denucé, there were 225, in which no attempt had been made to remove the foreign body, either by lithotomy or by bloodless extraction; and of these 20 or 11 per cent. died sooner or later from the direct effects of the foreign body. Of 83 individuals in whom extraction was performed without lithotomy, only two or three died. When extraction was impossible, the question arose whether the foreign body should be left to itself, or whether lithotomy should be performed. Denucé had raised his number of cases to 420; in 37 of these (14 being males) the foreign body was discharged spontaneously. Dr. Fürstenheim had some years ago described a case in which a broken piece of catheter was expelled from a man's bladder. He also knew an old lady from whose bladder a stone nearly as large as a pigeon's egg was spontaneously expelled. The common idea that foreign bodies are more frequently met with in the female than in the male bladder was not correct; it was indeed true as regarded such articles as medallions, forks, pepper-boxes, etc., but not as regarded broken bougies and catheters. According to Denucé, of 61 persons on whom lithotomy was performed for the removal of foreign bodies, 31 or 51 per cent. died; and of 225 cases collected by Porta, cystotomy was performed in 122, with a mortality of 20 per cent. Where simple extraction cannot be effected, the choice between doing nothing or performing lithotomy must depend on the circumstances of the case. Fortunately, the invention of lithotripsy and the construction of improved instruments had rendered the removal of foreign bodies from the bladder much easier than it previously was. According to Denucé, up to 1830 there were 100 cases of lithotomy for the removal of foreign bodies and only twenty-seven of extraction by the natural passages; while after that year there were 122 cases of natural extraction and only twenty-one of lithotomy. In future, lithotomy would become still less frequent in such cases. It was sometimes very difficult, indeed impossible, to seize a foreign body in the bladder. Some smooth elastic catheters could not be readily distinguished by the feel from the trabeculae of the bladder. The search must, therefore, be made carefully, and, in case of failure, must be repeated soon, and not put off. While the foreign body not unfrequently remained bare (this occurred in 87 out of 138 cases described by Porta), it is often found encrusted in the course of a few months, and may then be readily seized and broken up.—Herr Senator remarked with

respect to the interchange between the urine in the bladder and the blood and tissue-pores of the organ, that experimental researches had been made by Treskin and others, which showed that urine retained in the bladder lost urea and frequently became richer in salts. Under pathological changes attended with dilatation of the vessels, or where ulceration was present, such interchange might still more easily occur.—Herr Fürstenheim replied that Meckel had already spoken of such an interchange, but had only suspected it. He considered it especially desirable that investigations should be made as to the influence of a previously diseased vesical mucous membrane.—Herr Seligsohn said that incrustation of foreign bodies in the bladder had been experimentally demonstrated, especially after the use of drinks containing lime.—In reply to a question from Herr Güterbock, jun., Herr Fürstenheim said that he referred only to foreign bodies in the bladder, and not to those in the urethra.

Pathological Anatomy of the Eye.—Herr Hirschberg read a paper on this subject.

Experimental Researches on Fever.—Herr Senator said that Dr. Jacobson's observations confirmed to some extent the conclusions at which he had arrived, inasmuch as he found that the cutaneous temperature in fever underwent remarkable oscillations. While he did not believe that warmth or coldness of the skin indicated in all circumstances dilatation or contraction of the vessels, the conclusion that this connection existed was justified by the circumstances under which Herr Jacobson's observations were made. Herr Jacobson had alleged, as Herr Senator had inferred from experiments on animals and from chemical observations, that the cutaneous vessels were neither paralysed nor tetanically contracted; but he left it undecided whether Senator's further conclusion, that in most febrile conditions the vessels were abnormally irritable, was correct. Herr Senator found, independently of the reasons which he had already adduced, that the observations made by Herr Schülein, at the suggestion of Herr Jacobson, indicated an abnormal irritability or an abnormal irritation of the vessels in fever. While the temperature measured between the toes of a healthy person showed variations not exceeding 5° or 6° Cent. (about 9° Fahr.), the differences in febrile patients amounted to 10°, 12°, or 13° C.—Great oscillations might be observed even in a healthy person under certain circumstances: for instance, in one who, having cold feet, took a warm foot-bath.—Herr Jacobson did not dispute the fact that in certain febrile diseases there was increased irritability of the vessels of the skin; but, having in view a statement of Charcot, that Woodman had found variations of 8° or 10° in the temperature between the toes of healthy persons, he did not feel justified in assenting to the further conclusion of Herr Senator. To his remark that the changes of the cutaneous temperature did not always correspond with the oscillations in the vessels, he replied that it did not appear to him plausible that during febrile heat the vessels in a portion of the skin should contract while the temperature of the part rose, and *vice versa*. Against the method of thermo-electric measurement, there was, perhaps, the objection that the insertion of the needles, however fine they might be, into the superficial layers of the skin, might produce irritation of the sensory nerves and reflex changes in the lumina of the vessels. He had not, however, observed this action to be produced; it would be

indicated by paleness or redness in the neighbourhood of the irritated part. As regarded withdrawal of heat by full baths at a temperature of 14° R. (63.5° Fahr.) advocated by Liebermeister and Jürgensen, he considered that so great a divergence between the external and internal temperatures was not only irrational but dangerous.—Herr Seligsohn did not agree with this objection against the reduction of temperature. In the measurements reported there were two distinct factors; one only of which, the temperature in the axilla, which indicated the temperature of the blood, came into consideration here. The blood being regarded as the seat of tissue-change, it was correct to use means for the withdrawal of heat when its temperature was abnormally high. The good results obtained in typhus by cold baths—even though not always at 14° R.—spoke in favour of the practice. He doubted whether very disadvantageous results had been thus produced.—Herr Jacobson said that a febrile temperature in the axilla could not be taken as a measurement of the intensity of the oxidation process, inasmuch as it might not depend on increased production of heat, but on diminished loss of the heat. During rigor, there was an increase of the temperature in the axilla, and yet Herr Seligsohn would not give a cold bath in this condition. There could be no question as to the danger of producing collateral fluxions to internal organs, and especially intestinal hæmorrhages in enteric fever.—Herr Senator said, as regarded the unlimited employment of the energetic withdrawal of heat, that he believed, and had expressed the opinion several years ago, that this must of necessity produce a fluxion to internal organs. The advocates of this practice attached much importance to the after-effect, many of them believing that during a bath the production of heat was increased in a certain ratio to its withdrawal. This view, however, was quite untenable. As regarded the different conditions of the vessels accompanying changes in the cutaneous temperature, he could very well believe that a cold skin might exist with dilated vessels; an example of this was shown in venous stasis and in cyanosis. Further, in some so-called adynamic fevers, in many states of febrile collapse, the skin was often found warmer than normal, especially on the body. It might also be thought that in fever, when the skin had become hot and an irritation was suddenly applied to the vaso-motor apparatus, producing contraction of the vessels, the skin would remain warm for some time, deriving heat from the subjacent layers of tissue.—Herr Wiss said that the statement of Herr Senator, that the temperature of a febrile patient might rise while he was in the cold bath, was confirmed by some observations of Thompson, of New York, who used large air-cushions with entrance and exit tubes, through which a stream of cold water was constantly kept flowing.

February 9. *Sarcoma of the Kidney in an Infant.*—Herr Baginsky showed a case of sarcoma of the kidney in a child seven months old. It had suffered for several weeks from intermittent attacks of hæmaturia, which often coloured its linen red. On examination, a tumour was found in the left half of the abdomen, extending from the border of the ribs to the middle line in front and downwards to the crest of the ilium. The urine contained much blood, and the proportion of red and white corpuscles was normal; so that the idea of a leukæmic swelling was excluded. The character of the urine led to the almost certain

diagnosis of a renal tumour. The tumour increased in size; and from time to time a portion of intestine—apparently the colon with the rectum, pushed forward by the tumour—appeared below the umbilicus, somewhat to the right of the middle line. Fluctuations became perceptible in the tumour; and, dyspnoea being urgent, a puncture was made on the left side by Dr. Baginsky and Dr. Schadowald, which gave exit to 470 cubic centimetres of a dark beer-coloured fluid. It contained much blood; and urea and uric acid were found in it by Herr Mühsam. The child had vomiting and green stools, and died the day after the puncture. At the necropsy, there was found to be great anæmia of all the internal organs. The left kidney was converted into a cystoid tumour consisting of two parts, a large cyst containing fluid, and a firmer mass almost as large as a child's head. The descending colon and rectum passed almost perpendicularly over the tumour from the umbilicus to the pelvis. The tumour was adherent to the abdominal walls and to the diaphragm; the mesentery and its glands were unchanged. The tumour was found by Dr. Virchow to be a spindle-celled sarcoma. In it there were some small remnants of the kidney, containing numerous tubules with normal epithelium. The right kidney presented well-marked parenchymatous nephritis. Dr. Baginsky had met with in literature several cases of medullary carcinoma of the kidney in children, but none of sarcoma. The later symptoms, vomiting and green diarrhoea, were probably of uræmic origin. No convulsions were observed.

The Operative Treatment of Pleurisy.—Dr. Ewald showed a patient, and made some remarks on the operative treatment of pleurisy. The case, he said, was not an extraordinary one, but it well illustrated the application of certain principles which he had been led to adopt by a hospital experience of fifteen years. On the resumption of the publication of the *Charité Annalen*, Dr. Frerichs had entrusted to him the preparation of a report on the subject. A table which he exhibited showed that from 1860 to 1875 there were 143 cases of serous effusion in the pleura with four deaths, or 2·79 per cent.; of these, puncture was performed in twenty-six, none of which were fatal, between 1870 and 1875. In other words, while from 1860 to 1870 there were seventy-eight cases with four deaths, or 5·12 per cent.; from 1870 to 1875 there were 115 cases, and no deaths. He believed that there was a general agreement among physicians that an operation should be performed in cases of serous pleurisy, when they had lasted on an average four weeks, and did not yield to internal treatment. The prognosis of purulent effusion was quite different from that of serous; and, while the mortality of the cases not operated on was so great, attempts had been made to improve the condition of operation proceedings. There was, however, a deficiency of statistics to show indications for the operation. Dr. Ewald believed that the results of the operative treatment of pleurisy had often been disappointing, because too much was expected. As long as favourable cases were published and unfavourable cases held back, a proper conclusion could not be arrived at from the facts presented. In the *Charité Hospital*, there had been forty-six cases of empyema, with a mortality of 56·52 per cent.; of these thirty-five had been treated by puncture or excision, of whom 54·28 had died, and eleven had been treated by medicine, with a death-rate of 63·63 per cent. The mortality was then

somewhat greater in the cases treated by medicine alone than in the others; the difference, however, was not so remarkable as might have been expected, or even as Dr. Ewald himself expected, before he revised his materials. With regard to the duration of the disease in the cases which were not fatal, it was found to be 5·2 months in the cases not treated by operation, and 6·2 months in those treated by incision. It was also generally assumed—and in itself quite correctly—that the fever, pulse, and respiration were improved by operation. But, in taking all the cases together, the influence as regarded these three factors was not so great as might be expected. Even though there be a reduction of the fever and an improvement of the pulse and respiration, oscillations sometimes occurred which were perfectly explicable by the fact that along with the pleurisy there was chronic disease of the lung, accompanied with fever, quick pulse, etc. As regarded 'cure,' nothing was said of this, as the definition of the term was difficult, and Dr. Ewald did not know always how his predecessors had interpreted it. The results were not very brilliant; and the question arose for consideration, what causes prevented operations on empyema from being so successful as the opening of abscesses in other parts of the body. Dr. Ewald believed that there were two; the hitherto too exclusive employment of puncture, and the too long delay of incision, either with or without puncture. It was manifest and easily intelligible if one remembered the physical conditions present, that when puncture was made only so much of the contents of the pleural cavity could escape as corresponded to a space which was filled by the neighbouring parts. At a very early stage in suppurative pleurisy, however, changes took place which prevented the quantity removed from being other than very small, the entry of air being prevented. The disadvantages of puncture as compared with incision were shown by the following statistics. Of thirty-five cases treated by operation, incision, generally preceded by puncture, was made in twenty-six, with a mortality of 46·15 per cent.; and in nine cases puncture alone was made, with a mortality of 77·77 per cent. Of the last nine, two only were cured, and that doubtfully. The disadvantage of too late incision was also shown by the same cases. In those in which the operation was made from the first to the thirtieth day, the death-rate was 37·5 per cent.; when it was made after the thirtieth day, it was 53·8 per cent. The duration of treatment in the two classes of cases was, as above stated, 5·2 and 6·8 months respectively. But, when the cases only were taken in which incision was performed within the first fifty days, the duration of treatment was reduced to 4 months instead of 6·8. If, from the thirty-five cases operated on, six were deducted in which there was opening of an empyema necessitatis, it appeared that the probability of success in the cases of puncture was 68 to 1,000, and in the cases of incision 528 to 1,000, and that, in all probability, puncture alone would fail in 928 cases out of 1,000, incision being at last necessary. Dr. Ewald believed that it might fairly be concluded from these observations that, in cases of empyema, incision should be performed as early as possible, and puncture thrown overboard altogether, or only employed as the first stage of the operation. The question now arose, when was empyema present? This, as had been already pointed out by Ferber and Quincke, could

only be ascertained by an exploring puncture. The signs derived from the external appearance, the course of the fever, etc., sometimes failed; serum being sometimes found where these had led to the expectation of pus, and *vice versa*. Puncture was most easily made with Pravaz's syringe, and, if the instrument were carefully disinfected, was quite harmless. As regarded the operation, the pleural cavity was opened by a puncture, or the tissues were gradually dissected down to the pleura, which was then opened. If the opening should become too small to allow the introduction of the necessary instrument for washing out the pleura, it was a good plan to resect a portion of a rib. In the latter stages, a modification of Lister's treatment had been employed with satisfactory results. It might be said that the statistics adduced represented a rate of mortality not met with elsewhere. Dr. Ewald, however, had already said that his results were not brilliant; but he believed that hitherto the statistics of pleuritis had been such as to raise expectations which were not realised. It was to be hoped that the publication of the facts would be useful, and would lead to an improvement in the prognosis and mortality of empyema. The patient exhibited by Dr. Ewald was a man, aged twenty-six, whose youth had been weak and sickly, who in 1868 and 1872 passed through attacks of pneumonia of the left side, and on November 6, 1875, had all the symptoms of pleuro-pneumonia of that side. There was very soon an abundant exudation with much displacement of the heart. After the cessation of the continued fever on the 20th, hectic set in; and on the 27th, when an exploratory puncture was made, the effusion was found to be purulent. On December 2, an incision was made under Lister's method, and a remarkable quantity of purulent fluid was removed. The pleural cavity was daily syringed out, the precaution being taken of keeping all the instruments, compresses, etc., in a solution of carbolic acid, and of always performing the act of syringing itself under the carbolic-acid spray. When the patient was shown, there was only a small opening about $3\frac{1}{2}$ centimetres (1.36 inches) long, from which only a few drops of pus escaped daily. The contraction of the chest, which was considerable, was being treated with orthopaedic exercises. On the eighteenth day after this, the patient was discharged cured, with the exception of some affection of the right apex, which had been present some time.

Apparatus for the Microscopic Examination of Air.—Dr. D. Müller described an apparatus, in which air was drawn through a small quantity of distilled water that had been examined microscopically and then boiled for a short time.

February 28. *Dyspeptic Asthma.*—Herr Henoch described four cases in which severe dyspnoea occurred as a result of irritation of the alimentary canal. The first case was that of a child, aged nine months, recently weaned; it was generally constipated, but otherwise well, until March 21, when it was taken with repeated vomiting. On the following day the respiration was hurried, and though the bowels were opened by a purge and the vomiting shortly ceased, the child's condition became hourly worse; anxiety of countenance, rapid respiration, frequent pulse, pallor of the skin, lividity of lips, and complete apathy, were the symptoms observed, while repeated examinations failed to find anything wrong with either heart or lungs. In spite of treatment,

collapse and cyanosis increased, and death was imminent, when the application of dry cupping to the thorax brought relief. Examination on the following day again revealed nothing but an apparent tenderness of the gastric region, and Traube inclined to the following explanation of the symptoms, supporting himself by the experiments of Mayer and Pribram (*Sitzungsber. der Wiener Akad. der Wiss.*, July, 1872). Irritation of the stomach led to vasomotor spasm of the small arteries, and hence successively the cold extremities, the imperceptible pulse, stagnation in the venous system and the right heart, cyanosis, accumulation of carbonic acid in the blood, and the resulting dyspnoea. It is to be observed that the child cut an incisor tooth immediately after the subsidence of the symptoms. The second case was, however, more decided in its origin. A child was brought with severe dyspnoea, the respirations being seventy in the minute, and the expiration accompanied by a groaning noise. The heart and lungs were found healthy, but the child complained of headache and tenderness over the stomach. It had been well till the preceding evening, then had pain in the abdomen, was restless at night, and was seized with dyspnoea and cyanosis in the morning. It was ordered small doses of morphia, but shortly after returning home vomited a quantity of food, amongst which were large pieces of undigested egg. This had been eaten the previous evening, and on its rejection by the stomach the dyspnoea ceased. In a third case, that of a child three months old, dyspnoea occurred suddenly after three days' constipation, and was relieved by a purge; while in a fourth patient, similar asthmatic symptoms followed upon six days' epigastric pain and distension, and were removed by an emetic.—Dr. Retslag said that some years ago he was called in haste to a patient, whom he found suffering from severe dyspnoea and moderate cyanosis. The respiratory organs were quite healthy, but the man had a sense of weight and pain at the stomach. He was a musician in a military band, and, while heated during parade, had heartily drank a glass of beer and eaten a cake. An emetic at once relieved him of all his symptoms.—Dr. Wiss had often seen, in Baltimore, cases of severe dyspnoea and cyanosis with perfect soundness of the respiratory organs. Small doses of carbonate of potash were always followed by the best result. As an illustration of results which might arise from irritation of the stomach, he referred to a case of severe eclampsia in a primipara, which had its source in obstinate constipation.—Herr B. Fränkel said that the term 'dyspeptic asthma' denoted a nervous bronchial asthma, a reflex result of irritation of the digestive organs. From this, that described by Herr Henoch differed in several essential particulars. For, in his cases, there were none of the ordinary clinical symptoms of what was commonly understood as nervous asthma. He was not satisfied with the ordinary explanations of this condition. He could imagine that contraction of the systemic arteries might give rise to hyperæmia of the lungs, like the fluxionary hyperæmia sometimes observed when the body has been cooled. As regarded the frequency of the disease, he had never seen such a case, although he had seen a number of cases of asthma. In these, there was distinct meteorism; the pressure upwards of the diaphragm would be detected by percussion; but these cases differed from those of Herr Henoch, in which there was no meteorism.—Herr Senator

remarked that the experiments of Mayer and Pribram could not well be adduced in explanation of the form of disease described by Herr Henoch. These observers found that irritation of the stomach was attended with lessening of the frequency of the pulse and rise of the arterial pressure. Herr Henoch, on the other hand, had mentioned an extraordinary acceleration of the pulse as occurring in his cases; and, as regarded the blood-pressure, Dr. Senator believed that it was not increased, but diminished; and this idea seemed favoured by the presence of cyanosis, which might well depend on an abnormal accumulation of blood in the veins, not usually consistent with increased arterial pressure. Nor could the symptoms be explained by accumulation of carbonic acid, for the dyspnoea caused by this was a dyspnoea in the physiological sense of the word, the breathing being not only quickened but abnormally deep, naturally when the respiratory muscles and especially the diaphragm were not paralysed or otherwise impeded in their action. In Herr Henoch's cases, the breathing, though accelerated, was very shallow.—Herr Henoch said that in the bronchopneumonia of children, where there were the most distinct signs of carbonic-acid poisoning—cyanosis and loss of consciousness—without material changes in the brain, there was no question of abnormally deep respiration.—Herr Senator said that it was quite true that patients who died in a state of cyanosis with pneumonia, pleurisy, etc., did not always have dyspnoeal respiration. But here the complete distension of the lungs was mechanically impeded by infiltration or compression, and the nerve-centres, which had been irritated by the carbonic acid, lost more or less of their irritability in the agony of death or in the condition preceding it.—Herr Lewin must seek for another explanation. In its central as well as in its peripheral course, the vagus nerve was connected with so many important organs, that reflex phenomena should come under observation frequently in cases of indigestion, ulcer of the stomach, gastric fistula, etc. In all the cases adduced, however, there was meteorism, and in one foetus of the breath; and hence one might assume the evidence of poisoning by the absorption of the carburetted and sulphuretted hydrogen, formed during perverted digestion, which were capable of producing dyspnoea and even asphyxia. With the discharge of these gases, the symptoms disappeared.—Herr Guttman had not unfrequently observed in adults attacks of dyspnoea, the respiratory and circulatory apparatus being quite healthy; in these cases there were no grounds for assuming the existence of bronchial asthma. It might well be assumed that these asthmatic paroxysms were the result of irritation of the vagus nerve.—Herr Baginsky thought the name dyspeptic asthma of doubtful propriety, as bronchial or nervous asthma had not yet a fixed position in the nomenclature of children's diseases. The name might lead to error, as it suggested the idea of bronchial asthma. As far as he knew, the only cases of bronchial asthma were five published by Politzer, one by Guastalla, and two by Stryck. The text-books were entirely silent on the subject of asthma in children. Attacks of dyspnoea, like those described by the author, resulting from dyspepsia, or rather disturbances of digestion, appeared to him to be not so very rare; he had lately seen such a case in a feeble, badly nourished child, three months old. In the evening he found it breathing with difficulty, the respirations

being shallow. Its belly was distended, as was always the case with children fed with amylaceous food. The relief afforded by a castor-oil emulsion, which produced several yellow pulpy stools, was astonishing. The next morning the child was well. Attacks of dyspnoea also occurred in children under other circumstances, when nothing could be detected in the lungs. He had seen a case of catarrhal angina in a child a year and a-half old, with remarkably short breathing and slight cyanosis. A most careful examination detected nothing but a slight resonance in the left supra-spinous region. Ten days later, the child had lividity of the skin, coldness of the extremities, and the respiration so difficult and shallow, that death was expected every moment. The next day the child was apparently quite cheerful, only pale, and free from all impediment to respiration. These conditions alternated several times; in a few days the extremities and face began to swell, and death occurred in convulsions. The case was one of malignant scarlatina; and it was a question whether the asthmatic—or rather the dyspnoeic—symptoms were not the result of uræmic poisoning.—Herr B. Fränkel was aware of the existence of such cases as those described by Herr Guttman. He thought, however, that the sudden and transient attacks of asthma, which were to be regarded as reflected from a fixed locality, were not to be explained in this way.—Herr Senator had noticed the possibility of poisoning by the results of abnormal digestion. But in his case, the poison (sulphuretted hydrogen) was detected in the gas which escaped from the stomach and in the urine. He did not, however, think it correct to apply this explanation to cases in which the presence of the poisonous gases had not been actually detected.—Herr Guttman did not think that the more severe forms of dyspnoea could be sufficiently explained by supposing that arterial spasm might produce attacks of dyspnoea through the accumulation of blood in the veins and the irritant action of this carbonised blood on the respiratory centre. There were, for instance, cases of angina pectoris in which there was distinctly marked arterial spasm, but nothing which could be called true dyspnoea.—Dr. A. Fränkel remarked that Traube had described cases of ulcer of the stomach in which symptoms on the part of the vascular system were absent, but the patients suffered from severe paroxysms of distress. Traube had explained this as an 'irradiation neuralgia' reflected from the stomach through the vagus nerve.—Further remarks were made by Dr. Ewald, Dr. Senator, Dr. B. Fränkel, Dr. Lewin, and Dr. Henoch.

ACADEMY OF MEDICINE IN PARIS.

May 23. *Dry Colic*.—Dr. Mialhe called attention to the fact that in order to induce slow lead-poisoning, termed lead-colic, a large dose of a lead compound is not necessary; the smallest dose is enough, if it be continued long enough. Thus Duchenne (of Boulogne) has recorded a case of lead-poisoning in a woman whose business it was to wrap up tea in tin-foil, and who consequently had no other contact with this metal than the palm of the hands and the pulp of the fingers. Hence it was necessary in a hygienic point of view to restrict the use of lead and its compounds as far as possible.—M. Le Roy de Méricourt replied to M. Ruzé de Lavison, who wished to retain on the list of diseases a special morbid entity under the

name of dry colics of tropical countries, and to M. Brequet, who wished to substitute the term saturnine myosalgia for that of lead-colic, in accordance with the idea that the pain of so-called lead-colic had its seat in the muscles of the abdominal walls only. M. Le Roy de Méricourt believed that the name of saturnine myosalgia very imperfectly represented the entirety of the very complex symptoms and morbid conditions produced by lead-poisoning, and faradisation, which M. Briquet considered as the special treatment for this morbid manifestation, would not have the rapidly efficacious effects attributed to it by his learned colleague. He believed, in opposition to M. Briquet's opinion, that faradisation, like the injection of morphia, would be more permanently successful if the pain were only the expression of a transient spasmodic condition, and did not result from the introduction of a poison like lead into the system. It was not, therefore, possible to establish the diagnosis between lead-colic and the colic of tropical countries on this method of treatment.—M. Le Roy de Méricourt replied to the objections which M. Rufz de Lavison had made. His colleague had reproached him with only having taken into consideration the etiology of endemic colic as observed on the sea-board and in the inland districts. M. Le Roy de Méricourt had not deserved this reproach, for, on the contrary, he had been scrupulous in relating all the cases observed, as well on land as on board ship. He recalled to mind that at the time of the Cochín China expedition in 1862, in a country which above all others united the conditions looked upon as suitable to give birth to this affection, seventy-nine cases of colic were treated on board the fleet, and fifty-three in the ambulance at Saigon. Out of these latter fifty-three patients, three only came from duties which kept them on land. On the other hand, out of 597 deaths in a body of 7,589 men, there were only two deaths from dry colic, and M. de Lenguetti, who gave these figures in an article entitled 'One Year in China,' adds: 'Cases of dry colic are not uncommon. I have had the opportunity of seeing several in the hospital at Saigon, and I am convinced, from the identity of the symptoms and the progress, that this affection (dry colic) can only be owing to lead poisoning.' The same opinion had been expressed by M. Cattano in a letter to Michel Lévy, communicated to the Academy of Medicine, and by M. Benoit de la Grandière. M. Le Roy de Méricourt pointed out that the so-called endemic neurosis of tropical countries had no place in the clinical treatises on the diseases of India, written by English medical men who had practised in the country, nor in the publications on the same subject by the Dutch surgeons, who had had experience in the East Indies. Passing on to America, it was observed that during the Mexican expedition, the transport ships attached to the army corps, in which the hygienic measures prescribed by the minister were put into operation, did not show any cases of this endemic. The same immunity had been found to exist amongst the troops serving in the tropics, and in the Arctic regions, notwithstanding that there were no countries in which all the climacteric and miasmatic conditions likely to produce spasmodic colic were found in a greater degree. M. Le Roy de Méricourt had read and re-read all the documents of Mexican pathology, and had not seen any mention of endemic colic. During twenty years of very extensive medical prac-

tice at Saint Pierre, in Martinique, M. Rufz de Lavison himself did not remember having seen more than three cases of the endemic neurosis of tropical countries. It was highly probable that these three cases should be attributed to some misunderstood lead-poisoning, as often happened, and of which remarkable examples are quoted, analogous to that communicated by M. Gubler, in his 'Treatise on Historical and Geographical Pathology,' concludes as follows. 'If all the known facts on the endemicity and epidemicity of dry colic be collected, we find that, as to its progress and invasion, at least in the most recent times, it has not shown itself in the endemic state on any point of the surface of the globe.' All the attempts made to establish the diagnosis between dry colic and lead-poisoning had completely failed, and had only ended in unsustainable subtleties. As regarded the epidemics of colic in Poitou, Normandy, Devonshire, Madrid, etc., the researches of writers had proved that they must be referred to lead-poisoning. M. Le Roy de Méricourt had stated that the tin provision-cases were frequently the cause of lead-poisoning, but only when they were used as improvised table furniture, and that then the acid liquids which had been kept in them for a longer or shorter time ended by forming soluble salts of lead on the lower alloy of the solderings. He had not seen that that took place when it was a question of alimentary substances contained in intact tin cases. M. Le Roy de Méricourt ended by saying that the fatalist doctrine of telluric miasms, so far as it related to the so-called colic of tropical countries led to nothing, whilst the doctrine of lead-poisoning was fruitful in successful results. A prophylactic treatment of certain efficaciousness sprang from it, as well as a treatment based on chemical data which was of incontestable efficacy, since it favoured the elimination of the poison accumulated in the animal economy. M. Le Roy de Méricourt maintained therefore the conclusions of his first argument.

June 6. *Placental Souffle*.—M. Bouillaud, on the occasion of a communication by M. Glénard, gave the summary of a memoir on the nature of the sounds of the placental souffle. In a general manner, he divided the vascular sounds into two principal classes, normal and abnormal. The normal sounds were but slightly marked in the arteries, if no pressure were brought to bear, when a dull double sound was perceived, the one diastolic, the other systolic, stronger than the first. This double sound appears due to the vibrations of the arterial tube at the time of dilatation and retraction. Normally the friction of the liquid against the arterial wall would not produce any sound, if there was no obstacle to the passage of the blood; but on pressing with the stethoscope, a souffle was brought on, even when the blood was normal.

ACADEMY OF SCIENCES.

Electro-motor Forces.—M. Besquerel communicated a memoir on the electro-motor forces produced at the contact of liquids separated by capillary diaphragms. The results obtained were as follows. 1. If, in an apparatus which has reached its maximum, the diaphragm be replaced by a new diaphragm of a similar kind, the electro-motor force falls to its minimum or very near to it. 2. If, in an apparatus of parchment paper, which has reached its maximum,

the liquids be replaced by fresh liquids, there is no sensible lowering of the electro-motor force. 3. In a paper parchment apparatus the electro-motor force may be lowered by rubbing the membrane briskly with a glass rod. The conclusion of the author was that the solutions or the substances they contain, should be condensed in the capillary spaces, in the same way as are the gases in porous bodies. And this fact was intimately connected with physiology, seeing that in animal and vegetable organism, all the liquids are separated by more or less capillary tissues, which should give rise to effects similar to those just described.

Thermo-Cautery.—M. N. Paquelin presented a note on a new thermo-cautery. This surgical instrument, constructed in M. Collin's manufactory, was applicable in the operations done by the help of fire. It was used in the same way as the galvanothermic cautery, and obtained its heat from the combustion of certain volatile hydrocarbons. Its construction rested on the property which platinum possesses in common with all metals of the same order, when once brought to a certain degree of heat, to immediately become incandescent on contact with a gaseous mixture of air and certain hydrocarbonated vapours, and to retain this incandescence during the whole time of contact with this mixture. The operator can at will run through the whole scale of temperatures from dull red heat to white heat, and can keep it up as long as the operation requires it, to any degree of heat required. Its action can be instantaneously moderated or accelerated; it can be extinguished or relighted.

Fermentation.—M. Pasteur maintained his theory of fermentations, and produced a pamphlet by Dr. O. Brefeld, who, after having combated this theory in concert with Traube, hastened to acknowledge that he had been mistaken.

Carbonic Acid.—A memoir by M. F. M. Raoult was intended to show the influence of carbonic acid on the respiration of animals. The conclusion arrived at was that the presence of carbonic acid in the inspired air has the effect of diminishing the quantity of carbonic acid produced, and above all that of the oxygen consumed in an hour—or, in other terms, the presence of carbonic acid in the air inspired is an obstacle to hæmatisation.

May 15. *Regeneration of Limbs.*—M. Philippeaux presented a note in which he demonstrated that the limbs of the water-salamander do not grow again when they are thoroughly extirpated. On the contrary, it suffices to leave a small portion of the scapula to see the anterior limb become completely reproduced.

REVIEWS.

On the Education and Training of the Feeble in Mind. By J. LANGDON DOWN, M.D., London, F. R. C. P. Lond., Physician to and Lecturer on Clinical Medicine at the London Hospital, Physician to the Normansfield Training Institution, etc. London: H. K. Lewis. 1876.

Dr. Langdon Down points out that, with the progress of civilisation, there has been a gradual improvement in the treatment of those who are congenitally bereft of reason to a greater or less extent; but much yet remains to be done, he says, in the direction of raising them out of their pitiable

condition. One scheme for their benefit which he advocates, is the provision of training schools by counties singly or in combination, for those idiots and imbeciles who belong to the pauper class. Such institutions might, he thinks, be obtained and organised in a manner similar to those asylums which the lunacy law has called into existence. He stipulates, however, that idiots and lunatics must be kept altogether apart in distinct establishments. Training schools for idiots of the middle classes might be secured by voluntary contributions. They already exist for the reception of those who belong to the upper ranks.

Dr. Down thinks it essential that the idiot should be removed from home, whatever the social *status* or means of its parents may be. In the cottage, the idiot interferes with productive industry, and entails upon the mother burdens and anxieties that are not unlikely to lead to the propagation of other enfeebled and weakly children. In the middle class family circle, it is a source of pecuniary loss, and of danger and moral contamination to its brothers and sisters. In the houses of the wealthy it is, by the very conditions of life, relegated to a solitary existence and the care of servants. In no private house can the idiot obtain that combination of medical, physical, moral, and intellectual treatment, that alone is calculated to make its life more joyous, and to quicken its powers of thought. Treatment under all these different phases properly combined can only be found in a special institution, and even there it can only be successful when *unity* of origin, execution, and design is imparted to it by the controlling influence of one mind.

The medical treatment of the feeble-minded, the true basis of all treatment, should be directed to keeping the patient in the highest possible health. It often happens that, where declension of health takes place in the idiot, there is coincidentally a loss of the mental powers that had been gained. Before the incursion of fatal disease, there is often a premonitory failure of cerebral activity. Temperature has a powerful effect over idiots, and those of the Mongolian type lose a large amount of intellectual activity in the winter, and go through a period of hybernation. Morbid anatomy teaches that, independently of defects in the cerebral mass and in symmetry of the central ganglia, there is, in the idiot, very generally defective nourishment of the vesicular neurine. A liberal, varied, easily masticated dietary should therefore be given—a dietary containing a fair proportion of nitrogenous elements, and rich in phosphates and oleaginous constituents. The sleeping apartments should be lofty, well ventilated, well warmed; and frequent ablutions must be insisted on, as the exhalation from the skin of imbeciles is something *sui generis*.

In physical training the attenuated muscles have to be called into exercise, and movements of gradually increasing complexity have to be taught. In all imbeciles there is a striking want of muscular co-ordination. Every muscle and group of muscles must be trained until the various acts of prehension, locomotion, and mastication, are more effectually performed, until the tongue becomes a willing agent, and the lips no longer permit the saliva to dribble away. This muscular education reacts upon the brain and improves its powers.

The moral education of the imbecile consists chiefly in the subordination of the will, but corporal punishment is never to be resorted to. The tact of

the teacher is shown in devising rewards and punishments to suit each special case. The withdrawal of the teacher's love should be felt as the greatest punishment, and its manifestation as the greatest reward.

The intellectual training to which imbeciles are submitted must be based on the cultivation of the senses. They must be taught the qualities, forms, and relations of objects by the sense of touch, colour, size, shape by sight, varieties of sounds, sapsors, and smells, by ear, palate, and nose; defects of speech must be overcome by tongue gymnastics, and the power of imitation. The uses of money, the value of commodities, and differences in bulk and weight, may be best taught by a shop, in which one patient acts as the trader and another as the customer. Workshops, gardening, and farming operations, concerts, dancing, and theatrical representations must not be overlooked as valuable auxiliaries in treatment. J. CRICHTON BROWNE, M.D.

Ueber Ohrblutgeschwulst von 'Geisteskranken (On Hæmatoma Auris in the Insane.) By CHARLES S. W. COBBOLD, M.D., second Assistant Medical Officer, Leavesden Asylum. 1876.

This essay was read as an inaugural dissertation before the medical faculty of the University of Würzburg, and deserves notice as being not only a succinct history of the course of the disease in question, but also containing some new and original facts. The chief German authorities—Gudden and Fischer—are quoted, and the experience of English alienists is adduced to prove some practical points.

A brief résumé of the contents, given chiefly in the author's own words, will be the best mode of reviewing this brochure. He notes that the thickening of the anterior wall of the tumour is due to a new development of cartilage on its inner surface, whilst some have maintained that the effusion was originally in the substance of the cartilage, forgetting that the anterior wall of the tumour is at first soft and flexible. Gudden has fallen into this error. After speaking of the bad prognosis in the 'insane ear,' he proceeds to the pathology, which is best made out when the stage of hardening has supervened. On section, one finds, instead of a single cartilage layer, two or more such, in some places thicker, in others thinner, than normal ear-cartilage, separated from each other by a mass of connective tissue, as a rule disposed irregularly, but capable of arrangement at times; and we may see two principal external cartilage-lamellæ, between which is a mass of new-formed tissue, holding small isolated plates of cartilage. The two external layers are joined at their borders and connected with the surrounding normal cartilage. Under the microscope, the cartilage is in no way different from the sound ear. The new tissue is rich in blood-vessels; and, in addition to the newly formed pieces of cartilage, we find in hæmatomata small bits of bone, developed during the shrinking process. The course of these appearances seems to be that at first effusion occurs between the ear-cartilage and its perichondrium, causing a separation of the latter from the former. When the absorption of this fluid occurs, a new cartilage-layer is developed from the inner surface of the perichondrium, thus causing two cartilage-layers, containing between them the results of the effused fluid. This substance consists chiefly, and often entirely, of yellowish-white connective fibres, and may be regarded as a

new perichondrium which attaches itself to the inner surface of the cartilage. During the separation process, the perichondrium is seldom scaled off as an entire layer, but is more or less torn, so that pieces remain in the cartilage; on the other hand, the perichondrium at times takes cartilage-layers with it, hence the irregularities found after death in the cartilage-layers. The ear-cartilage is very brittle when not covered with firm membrane so that it breaks and splits under the pressure of fluid. Up to now, a great uncertainty has prevailed as to the pieces of bone which are now and then found in othæmatomata. Most observers have taken the cartilage to be the source of them, but this is not the case. Dr. Cobbold quotes an instance showing after death a hard knot in a withered ear, in the fossa of the antihelix. On cutting into it, the cartilage was found split into two layers, separated by a connective tissue mass in which was imbedded a small piece of bone of the size of a pea, and flattened. It was true bone, with Haversian systems, and rich in blood-vessels. The Haversian systems were irregular, and the tissue was easily cut with a knife. Besides this bone-formation, there were, between the two cartilage-layers, small isolated plates of cartilage irregularly disposed in the connective tissue, and absolutely resembling ear-cartilage. None of the cells were in rows, but the bone seemed formed as it is in membrane. The author thinks that the absence of appearances of ossification in the cartilage itself, and the fact that the bone and cartilage touched each other at no point, prove that the one was not developed from the other; and he concludes that all bits of bone found in these 'insane ears' are developed in the same way, viz., from the fibrous mass which remains as the result of the effused fluid.

As to the causes generally assigned, viz., according to some authors, the spontaneous origin of the disease, whilst others consider it traumatic in origin, the truth would seem to lie between the two; for there must be present a morbid condition of the blood-vessels, and a slight force, such as washing the ears or rolling about in bed, may easily set up a mischief which would not otherwise have happened. Fischer thinks that the predisposition to othæmatoma depends on a specific dyscrasia, and has nothing especially to do with insanity. The signs of this dyscrasia are the frequent occurrence of petechiæ, boils, abscesses, sores, and hæmorrhages, spongy condition of tissues, œdema of feet, cold and pale skin, torpid bladder and rectum. In many persons who never had othæmatoma he found proofs of chronic inflammation in the ear-cartilage and its coverings, e.g., either between the cartilage and perichondrium or in the plate itself of the cartilage were cavities from one to six lines wide. The cavities are oftenest found on the front of the ear, are at times empty, but generally contain a few drops of yellowish or grey fluid. In these spaces blood is effused either from spontaneous rupture of a vessel (especially in one already suffering from defective blood and altered vessels), or the vessel may be burst from external violence. Gudden says, however, that the sole influence of the diseased condition of the blood (want of fibrin) shows itself by absence of coagulation, and that hence, under force, an effusion occurs more easily, the appearances of which are almost identical with those produced by forcibly smacking the ear of a corpse.

The whole pamphlet is so complete, and is written in so scientific a manner that we hope Dr. Cobbold

will translate it into English, for, though much scattered writing on this disorder is to be found in our literature, we are yet in need of a succinct account of it.

T. C. SHAW, M.D.

Medical History of our West African Campaigns.

By ALBERT A. GORE, M.D., Surgeon-Major.
London: Baillière, Tindall, and Cox. 1876.

Dr. Gore says, that 'nearly every attempt to wage war in Western Africa in former years was unsuccessful, as much from the neglect of the most obvious hygienic precautions as from the admitted deadly nature of the climate.' Our last war in that unhealthy region was well said to be 'a doctor's war,' and it is just because doctors were, from the proved necessity of the case, permitted to bring into play the resources of modern military hygiene, that it was, unlike the other little wars recorded by Dr. Gore, successful. If there be any members of the profession who hold with Dr. Oldham and the late Dr. Inman, that the soil of pestiferous climates, like that of Western Africa, is incapable of giving off emanations hostile to life, we commend this work to their candid perusal. Here they will see that a European regiment of ordinary strength, if left unprotected from the general insanitary conditions of the climate, will 'die out in four years.' Even the African born and bred in the West Indies suffers from the climate in a ratio far exceeding that of his race indigenous to the soil. The climate of this coast is nearly as fatal to seamen as to soldiers. During the three years and a half employed by Captain Owen in surveying the African coast, the vessels under his command lost thirty-eight officers and eighty-five per cent. of their crews, principally from malarial fevers. The diseases accountable for the heavy death-rate in Western Africa, are dysentery, diarrhoea, and the malarial fevers.

The work before us gives not only a history of the earlier and later medical events, including a detailed history of the rapid campaign under Sir Garnet Wolseley, but also a description of the climate, and a detailed account of the only hygienic conditions under which it is possible to carry on military operations on the western coast of Africa. Dr. Gore shows how much in all previous wars the effects of climate were aggravated by intemperance, an injudicious mode of life, and exposure. 'The seven great predisposing causes to disease were a high temperature, excessive moisture, chills and great alternation of heat and cold, a heavy rainfall, malarious emanations, a defective and unnutritious food supply, and indifferent water; and the rainy season was the period of the year when disease was most prevalent, and its effects most severely felt.'

It is obvious from Dr. Gore's narrative, as well as from the admirable account of the Ashantee campaign by Sir Anthony Home, K.C.B., principal medical officer of the expedition, and his successor in that important post, that the striking success which attended this expedition and the small mortality that attended it, were due to the manner in which the medical officers met and combated the enormous difficulties in the way of carrying on war in such a climate. And not the least part of the credit justly due to the able commander of the expedition, was the support given to the scientific officers who were his advisers on all questions relating to the health of the force under his command. It was by attention to season, food, dress, temperance, water-supply, and carriage—in a

word, all that is understood by the term 'military hygiene'—that the end was attained at the smallest possible amount of suffering. Our former 'little wars' on the West Coast of Africa were carried on on the principle that the business of doctors was to cure disease; here they were allowed to prevent it.

Striking testimony is borne by Dr. Gore to the good service rendered by the *Victor Emmanuel* hospital ship, fitted up as that vessel was in the most perfect manner for the reception of the sick and wounded, with all modern appliances for the relief of human suffering. The result obtained was that the *Victor Emmanuel*, although, on her departure from the coast, 'filled with cases of the most serious description, delivered the greater number of her patients convalescent, and in a state to return to duty.'

One of the most interesting chapters in the book is the one in which the author discusses the question of a 'spirit ration' for troops serving in such a climate as that of West Africa. His conclusions will not, we fear, find acceptance with the advocates of total abstinence in all climates and under all circumstances. Dr. Gore is, as a matter of course, opposed to everything in the shape of intemperance and the unregulated use of alcohol; but he appears to be of opinion that a moderate allowance of it in such a climate when the march is over, and when taken with food, is perhaps beneficial, certainly not hurtful, and is very grateful to the tired recipients. In this he is borne out by the opinion of some of the most careful medical observers on the expedition. He considers the use of alcohol on the march decidedly injurious and unnecessary. He sums up in the following words. That it (alcohol) 'can be dispensed with in Africa by men of hardy frame, and indomitable perseverance under great exertion, has been proved by more than one great traveller; but that it does any harm when taken in moderation at proper times and places, I do not believe.' Dr. Gore discusses the question with a full knowledge of the late Dr. Parke's experiments, and of the limits shown by that physician to be those that do not cause undue disturbance either of the nervous or circulatory systems. On one point Dr. Gore expresses himself decidedly, and that is on the good effects of alcohol in the treatment of exhausting malarial affections, 'from which the patient would in many instances not rally without it.' In this, his experience agrees with that of Sir Samuel Baker, and of some of the most intelligent companions of Livingstone.

W. C. MACLEAN, M.D.

A Handbook of the Theory and Practice of Medicine.

By FREDERICK T. ROBERTS, M.D., B.Sc., M.R.C.P., Fellow of University College, Assistant Physician and Assistant Teacher of Clinical Medicine at University College Hospital, Assistant Physician to Brompton Hospital for Consumption and Diseases of the Chest, etc. Second edition, pp. 815. London: H. K. Lewis. 1876.

Est modus in rebus. There is a fashion in textbooks as well as in other things. Take anatomy for example. Time was when the 'Dublin Dissector' and 'Quain's Anatomy' were in everybody's hands. Then Wilson's 'Anatomist's Vade Mecum,' and after that, Ellis's 'Demonstrations of Anatomy' were all the rage. Now, Mr. Heath's 'Practical Anatomy' is, we understand, a great favourite, and we are glad to see our old friends Quain and Sharpey, and

Wilson's 'Vade Mecum' coming out again in all the glory of new editions with new editors. It is the same with works on the Practice of Medicine. Hooper's 'Vade Mecum' in the hands of various editors was long, and still is, a popular book. But for awhile, as far as medical students were concerned, no books had such a sale as the manuals of Dr. Tanner. His small book (long out of print) was a marvel of concentration, and even now second-hand copies of it fetch more than their original price. Studious men may sneer at the desire for small and handy books on the part of those less fond of reading; but even the most bigoted of opponents must admit that merit is not always in proportion to size. This is well exemplified in the volume before us. In the compass of little more than 800 pages, Dr. Roberts has condensed a mass of matter on those diseases which are generally called medical in opposition to surgical, such as we think no book of the same size ever before contained: and, although thus condensed, the book is still a readable one. We hear that it is fast replacing the volumes of Niemeyer, which were until lately in fashion with students reading for medical examinations. Right glad are we to find that this is the case, for although Niemeyer's work was strong as regards pathology, it was lamentably weak in its therapeutics. There was, moreover, a sketchiness and pretentiousness about it which were far from agreeable.

The volume before us is singularly free from these faults. So far as its compass allows, it is a very thorough-going book. The question of treatment is fairly discussed as each ailment in our medical nosology comes before us, and the treatment is generally that of the best men of the day. Without wishing its author to revert to the practice of Thomas's now antiquated manual (by no means a bad book in its day) and give formulæ at the foot of every page, we cannot but think that a few more directions as to doses would increase the value of the advice given as to treatment. To give quinine in one-grain doses in order to reduce temperature in fever is simply to waste an expensive medicine, without benefiting our patients; and although general directions are given on this subject at page 77, the doses are not mentioned again under the special diseases.

Like all monographs, the work is somewhat unequal in parts. Fevers, acute diseases, and the special pathology and symptomatology of thoracic diseases (those of the heart and lungs) are given at considerable length, and better perhaps than in any other manual of medicine. But the sections on nervous diseases (though containing much valuable matter) are by no means equal to the other parts of the work; and the final chapter on skin-diseases is, we think, the worst done part of any. And this is to be regretted, because skin-diseases are of extreme value in training students to habits of accurate observation. They are also valuable as exhibiting visible examples of the same processes of inflammation and repair, which take place in internal organs where, unfortunately, they are out of sight.

The table of contents at the beginning of the book has no references to pages, and is, therefore, useless, and some signs of haste are manifest in the numbering of chapters and elsewhere. The rough way of using Pettenkofer's test given at page 583 can lead to nothing but error. Moore's test for sugar in urine (boiling with liquor potassæ) is condemned,

because liquor potassæ impregnated with lead would give a dark colour with albuminous urine; but the student is not cautioned against the common mistake of testing for sugar without first getting rid of albumen, or at least ascertaining its absence. The author gives minute directions for Fehling's test-solution, which keeps (as he admits) very badly, whilst Dr. Pavy's formula, which is much more durable and permanent, is not mentioned. Surely Dr. Roberts does not seriously mean that a registering clinical thermometer is to be warmed before use till the mercury reaches 98° Fahrenheit; for in this way sub-normal temperatures, which occur even in fevers, where temperature runs high, must escape recognition. He probably wrote 93° or 95°, and the last figure has been mistaken by the compositor, and escaped notice in revision.

The value of the book would be enormously enhanced by a few good and well chosen illustrations; and we trust that future editions will contain these. At present there are only a couple or so on the sphygmograph.

If we have thus pointed out a few small blemishes, it is because we like the book much. It is not only well printed, and neatly got up, but it is well written; and Dr. Roberts may fairly be congratulated on having produced the best text-book of medicine we possess, for the student to use not only in getting up for examinations, but as a ward-manual also. It is a book of reference, portable enough for the knapsack of the army-surgeon and the traveller. We will go further, and say that the busy consultant or practitioner may often turn to its pages with advantage. The book is one that shows its author not only to have read much, but to have well digested what he has read. It is difficult to select passages from a work of this kind, so as to convey a fair idea of the author's style, and of the way in which he has done his work, but the following on tubercle is, perhaps, an average example of both contents and style. It is from page 253.

'Anatomical Characters.—The typical form of true tubercle almost universally recognised at the present day consists of certain minute bodies termed *grey granulations* or *miliary tubercles*. These appear as small nodules or granulations, about the size of a mustard or millet seed, generally roundish, but sometimes slightly angular, well defined, firm, of a greyish-white or pearly grey colour, more or less translucent, and non-vascular. These may be quite separate and distinct, or collected into irregular groups, their individual outline being then rendered indistinct. In some structures, however, tubercle is more diffused, and appears as a greyish *infiltration*, which presents a smooth and dense section; but many so-called tubercular infiltrations are probably inflammatory in their origin. In its earliest stage tubercle is not visible to the naked eye, and it is by continued growth and agglomeration of fresh tubercles, that it becomes perceptible, appearing either as granulations or infiltrations according to their mode of arrangement.

'What has been described as yellow tubercle is nothing but nodules or masses of caseous matter, derived either from tubercle, or from various inflammatory and other morbid materials which have undergone cheesy degeneration. True tubercle may be mixed with this material; while it also tends to excite inflammation around, and thus its physical characters may be more or less modified.

'Microscopic Structure.—Tubercle may be de-

scribed as consisting of the following histological elements: 1. Lymphoid corpuscles, which are very small, round, colourless, translucent, and slightly granular, each containing a single nucleus: 2. Epithelioid cells, of larger size, very delicate, and hence liable to rupture and set their nuclei free: 3. A giant-cell, which consists of a mass of finely granular protoplasm of very varied form, often presenting processes at its margin, and having imbedded in it a great number of nuclei, chiefly at its periphery, and sometimes regularly arranged: 4. Free nuclei: 5. An intercellular substance which may be either amorphous, homogeneous, and hyaline; granular; or in the form of a fine reticulum or network of delicate fibres. There is much difference of opinion among observers as to the presence, arrangement, and relative proportion of these elements. The lymphoid cells are generally considered to be most abundant, but Schüppel describes tubercle as being made up chiefly of epithelioid elements surrounding the giant-cell. This giant-cell has attracted much attention of late years. It occupies the centre of each tubercle, and great importance was attributed to it by Schüppel and others, but Friedländer has since shown that it is found in many healthy and morbid products as well as in tubercle. Tubercle has been described by some writers as cellular and fibrous, according to the proportion of cells and fibrous reticulum entering into its formation. Friedländer, however, insists that in recent tubercle no fibres are visible, and that the appearance is due to the hardening processes employed in its preparation for microscopic examination. Tubercle does not contain any vessels or lymphatics of its own, but it may involve those belonging to the original tissue, and also pigmentary matters. As tubercle undergoes degenerative changes, its microscopic appearance alter materially.

Dr. Roberts then devotes about a page to its terminations and changes, and the tissues and organs affected, and a couple more to its pathology. Sufficient, has, however, been quoted to show the general style of the work.

Cholera Epidemics in East Africa. By JAMES CHRISTIE, A.M., M.D. London: Macmillan and Co. 1876.

The object of this work is to give an account of the several diffusions of cholera in East Africa from 1821 to 1872, with an outline of the geography, ethnology, and trade connections of the regions through which the epidemics passed.

We have risen from a careful perusal of this book with a strong conviction that, if evidence were wanting to establish the fact that cholera 'seeks man out wherever he congregates,' and that man carries it 'from congregation to congregation,' such evidence would be found in this volume. Dr. Christie remarks that, as the natives of Africa do not travel far beyond the boundaries of their own territories, the great highways are traversed only by traders at definite seasons of the year, and this uniformity of life is broken only by wars and raids of marauders in quest of slaves and cattle. The track of an epidemic of cholera can, therefore, be easily traced, and its laws of propagation more readily ascertained, than in more civilised countries, where there is an intricate net-work of lines of communication.

The author in his first chapter gives in much

detail the meteorology and climatology of Zanzibar, and in another part of his work a description of the sanitary condition of the town and island, and of the manners and customs of the population. It seems established that, notwithstanding the extremely unfavourable nature of the climate of Zanzibar, and that of the east coast of Africa generally, no epidemic of cholera ever originated there, according to Dr. Christie; the evidence he has collected goes to establish the fact that the disease has always been traced to Arabia, to the Gulf of Aden, or the Red Sea ports, with which Zanzibar at certain seasons is in commercial communication. The description given of the sanitary condition of Zanzibar and of the habits of its varied inhabitants is simply frightful; and although they seem insufficient to breed the disease *de novo*, they do in a very remarkable manner illustrate its local propagation. In spite of many ingenious and persevering efforts to explain away the spread of cholera in India by the movements of pilgrims, bodies of troops, and even of one or more persons from an infected locality, and to attribute the carrying of the disease not to persons, to man, his clothing, his personal effects, but to the disease-carrying power of air-currents, the evidence on this point is irresistible, and is strongly confirmed, as we have said, by the facts established by Dr. Christie's researches; for if we follow the traces of the epidemics whose course has been so perseveringly tracked by our author, the connection of outbreaks in Africa with outbreaks in Arabia becomes apparent, and that the main agents in the dissemination of the disease are the Mecca pilgrims. Accordingly, Dr. Christie devotes a chapter to the Moslem pilgrimage to Mecca, considered in relation to diffusions of epidemic cholera.

'The Kaabah within the Bait Ullah at Mecca is the central converging point of the Moslem world; and to and from it there is ever on the road a continuous stream of pilgrims from the remotest parts of the globe. . . . Pilgrims come from the Cape of Good Hope and Mauritius, by way of India, in square rigged vessels, and from Madagascar and the islands of the Mozambique Channel by way of Makulla or Aden, in native craft. Zanzibar and its maritime dependencies, from Cape Delgado to Guardafui, sends its contingent during the south-west monsoon, by Makulla or Aden, and in some cases to Hadeida or Lidda direct.'

In describing the 'pilgrim ship,' the marches and sufferings of the different caravans, all converging on Mecca, the fatigues of the journey, and deaths, as well as the duties and ceremonies performed by the pilgrims on arrival, Dr. Christie draws largely on the narrative of Captain Burton, who, it is well known, made the pilgrimage in the guise of a Moslem pilgrim. Nothing can be more disgusting than the accounts quoted from Burton, Burckhart, Potts, and other Europeans of the sanitary condition of Mecca; and although our author is of opinion that there is no proof that cholera can be traced merely to such unsanitary causes as prevail both at Mecca and Zanzibar, there can be no doubt of the effect of the fæcal atmosphere, the decomposing blood of the victims slaughtered in the valley of Mina, the severe fatigue endured by all the pilgrims, the drinking without stint of the purgative waters of the otherwise impure well of Zem-Zem within the temple of Mecca, the arbitrary change of dress which is imperative on all without exception of country, age, constitution, or season of the year. 'No matter what the season of

the year may be, genjal spring, the burning heat and simoom of summer and autumn, or during the rain and tornadoes of winter,' the obligation to assume the thrâm or sacred habit is binding on all. It consists only of two woollen wrappers, one 'to cover their privities,' the other to be thrown over the shoulders, leaving the head bare. Add to the above the frenzied excitement of the pilgrims, the effect on health of the crowding together an immense concourse of people within a very limited space at Mecca, Arafat, or Mina, and within the Kaabah and the mosque, where even the diseased and the dying struggle to join the throng, 'that they may die in the performance of the religious ceremonies.' 'Not only,' adds Dr. Christie, 'are the dying commingled with the living; even the dead are introduced into their midst, and we have a combination of circumstances well adapted to act as predisposing causes and means of propagation of cholera, and for regarding Mecca, during the pilgrimage season, as one of the most favourable spots for the germination or reproduction of an epidemic.' With such facts before us we cannot wonder that every caravan route from Mecca has been at some time or other a cholera track, and that wherever the pilgrims have reached, on their journey homewards, centres of population, the disease has spread amongst the people. The work is illustrated by an instructive map, showing the geographical distribution of cholera in Eastern Africa in 1864-1871.

The labours of Dr. Christie form a valuable contribution to our knowledge of the spread and propagation of cholera. We have said that his researches establish the fact that cholera is not endemic in East Africa, and that it invades that country invariably from Arabia, the Gulf of Aden, or the Red Sea ports; and it seems equally clear that, although Arabia is often scourged by it, the disease is not endemic there, but reaches that country from India, and that what gives rise to the notion that cholera is endemic in some of the provinces of Arabia, is the fact that, from the causes stated above, one invasion of the disease succeeds another with such rapidity as to give it an appearance of being endemic.

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Bonfigli, Dott. C. Sulla così detta pazzia morale; lettera. Milano, 1876.

Chiarelli, Dott. Giuseppe. Sei casi di decollazione preceduti da poche riflessioni su cotesta operazione, e proposta di un nuovo uncino decollatore. Torino, 1879.

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MISCELLANY.

M. POTAIN has accepted the share of the joint editorship of the *Bulletin Général de Thérapeutique*, vacant through the death of M. Béhier.

Le *Journal des Sages Femmes* contains an article on the 'Rights and Duties of Midwives,' in which the writer points out that the midwife should take care that no syphilitic child is allowed to be suckled by a healthy wet-nurse.

CHARTREUSE.—Dr. Decaisne lately read a paper at the Academy of Medicine on the liqueurs known as Chartreuse and Eau de Mélisse de Carmes, in which he pointed out that the plants used in manufacturing this liqueur are the same as those used for absinthe, namely, angelica, coriander, aniseed, hyssop, balm, peppermint, thyme, rosemary, sage, sweet marjoram, arnica, absinthe, rosemary, *calamus aromaticus*, cinnamon, cardamoms, mace, nutmeg, cloves, balsam, and Tonquin bean. These plants are all classed as excitants in therapeutics, and show the same physiological effects. They contain all, or nearly all, the more or less active and more or less dangerous essential oils. Their proportion in the fabrication of the three liqueurs varies according to the liqueur and to the flavour which the distiller wishes to impart to it. In equal, or nearly equal doses, the effects of absinthe, of Chartreuse, and of Eau de Mélisse, are identical on the animal economy, and especially on the nervous system, and produces alcoholism in the same manner. *A priori*, and this conclusion can be demonstrated by ulterior reasons, M. Decaisne is of opinion that all the liqueurs made from the same or similar plants containing active essential oils, and showing the same or about the same alcoholic percentage, may, when they are too freely used, produce the same accidents which constitute the condition known as alcoholism.

THE WOMEN'S PAVILION AT THE PHILADELPHIA EXHIBITION contains a large glass case labelled 'Materia Medica' from the Women's Medical College of Pennsylvania—the first of its kind—and at which, though it is very young, some sixty or seventy 'lady-doctors' of the future are already qualifying for their degree. Elsewhere in the building are artificial teeth made by the only woman-dentist in Philadelphia and regularly graduated in the 'Dental College.' Two Philadelphian lady physicians also exhibit electro-magnetic appliances for the human body.

THE MARRIAGE OF NEAR KIN.—M. Saint Martin, of Madrid, has published some statistics which tend to prove that consanguineous marriages have but a very slight influence in producing the ill effects which are generally ascribed to them. The results of his figures are as follow:—Out of 161 consanguineous marriages 12 were childless. The remaining 149 unions had produced 551 children, out of which 300 were in good health, 236 were dead, and 15 sickly. The latter showed the following affections:—5 deaf and dumb, 2 idiots, 6 scrofulous, rachitic, or tuberculous, and 2 hemiplegic.

A NEW ARTIFICIAL EYE.—Among the curious developments of science is the recent production, by Dr. C. W. Siemens, of an artificial eye sensitive to light. The new eye is composed of an ordinary glass lens, backed by an artificial lens of selenium. Mr. May, a telegraph clerk employed at the Valencia station of the Atlantic cable line, first observed in 1873 that the electrical resistance of selenium was instantly altered by light, the resistance being diminished by increase of light. Dr. Siemens made use of this peculiarity of selenium in the construction of his novel eye. An electrical circuit is arranged, of which a bit of selenium forms a part, and constitutes the retina. When a strong light is admitted into the lens and falls upon the selenium retina, the current of electricity flows and (by acting upon small magnets) may be made to work the artificial lids of the eye, opening or closing them according to the intensity of the light.

THE REACTION-TIME.—The time elapsing between the action of an external stimulus on some part of the body, and the giving of a signal (previously agreed upon) in reply, has been determined in the case of several senses, by various experiments. A short time ago MM. Vintschgau and Hönigsmied sought to determine this 'reaction-time' for sensations of taste on the point of the tongue; and in the subject experimented on, this was found to be, for ordinary salt 0.1598", for sugar 0.1639", for acid 0.1676", and for quinine 0.2351". It is interesting to compare the results which the same observers have recently obtained in further experiments as to the reaction-time for sensations of touch on the tongue. This, in the same individual, was found to be 0.1507" in the case of the tongue being touched with a pencil; a smaller value, therefore, than that of the shortest interval in the former case of taste. In the middle of the tongue the reaction-time, on touching with a pencil, was 0.1527". A weak electric stimulation of the tongue-point was answered after 0.1813", whereas with a stronger electric stimulus the answer came in 0.1452". These numbers represent, in all cases, the averages of all the experiments. It will be seen, then, that the point of the tongue is most sensitive for strong electric stimuli, and the order of sensibility for the remaining stimuli, was (for this individual), contact, saltiness, sweetness, sourness, weak electric stimulation, and bitterness. Other persons on whom similar measurements were made, gave values that were different both relatively and absolutely, and the results for different persons appear to be not comparable together. Various secondary influences play an important part, among which may be cited the thickness of the mucous membrane at the particular part experimented on; this may considerably increase the reaction-time. An estimate of the comparative sensibility of the separate organ of sense can best be had from comparisons in one and the same individual.

INFLUENCE OF VACCINATION.—In the German army, vaccination and revaccination are obligatory. According to statistics collected by the German authorities, the German army, which numbered a million men during the war with France, lost only 286 men by variola, while the French army lost nearly 26,000 by that disease.

A FAMOUS SURGICAL INSTRUMENT MAKER.—M. J. F. Charrière, the noted surgical instrument maker of Paris, has lately died at the age of seventy-three. Charrière was a Swiss by birth, but came to Paris when he was twelve years of age, to be apprenticed to a cutler. Having served a five years' term, he bought for a hundred pounds the little business where he had worked, and set earnestly to work to study his occupation, bringing to bear upon it the devotion and affection of a true artist. Soon Sheffield heard of the steel instruments which Charrière was producing, and consumers placed so great a reliance on his products that surgical instruments became an acknowledged branch of Paris manufacture, and in less than twenty-five years from the date of commencing business Charrière had exchanged his little cutler's shop in the Court of St. Jean-de-Labian for large workshops in the Rue de l'École de Médecine, in which more than 400 artisans were employed. At the London Exhibition of 1851 Charrière competed boldly with the most eminent English makers, and so successfully (say the French journals) that the international jury had determined to award him the Council Medal, the highest prize they had to give, and that this was only prevented by the energetic jealousy of our own countrymen. However this may be, a theatrical scene was got up when the French honours of the exhibition were distributed in November, 1851. Louis Napoleon, then President of the Republic, was officiating, when the Baron Dupin asked permission to proclaim 'in the name of the thirty-six members of the French jury, in the name of the Institute, and in the name of the Academy of Medicine, that M. Charrière was the first artist in Europe in his own speciality.' In consequence of this speech Napoleon conferred on the old cutler's apprentice the officer's cross of the Legion of Honour. The same evening a banquet was given at the Elysée in honour of the occasion, at which Louis Napoleon presided. In the course of the evening the President stepped up to M. Charrière, and taking his own cross from his breast, said, 'Allow me the honour of exchanging decorations.' Napoleon's cross was composed of diamonds. Twenty years ago M. Charrière handed over his business to his son, who, however, died soon afterwards. The father again took his old place, but had altogether retired several years before his death. His successors are two of his pupils, Messieurs Robert and Collin. To this firm was awarded a diploma of honour (the chief prize) by the jury of the Vienna Exhibition.

ARMY HOSPITALS.—The following account of the Hospitals of the Medical Department of the United States Army, exhibited at the Centennial Exposition at Philadelphia, is condensed from the *New York Medical Record*. The Model Army Hospital, designed to represent the system of hospital construction actually employed by the medical service of the army, both in peace and war, for twenty-four beds, which has been built in the Exposition grounds, is described as a frame building, with a shingle roof, surrounded by a verandah. It consists of a central administration building, 35 feet front by 39 deep, and two stories high, with a two-storied back-building 40 by 14 feet, and two wings 45 feet by 24, one for each ward of twelve beds. The floor of the whole building is raised three feet above the ground, and is well supported on timber posts. In the plan of the ground floor are the wards, each 24 ft. by 45; dispensary, 14 ft. by 15; office, 14 ft. by 15; mess-room, 14 ft. by 20; kitchen, 14 ft. by 14; nurses' room, 14 ft. by 15; earth closets, each 9 ft. by 9; bath-room and lavatory; closets; pantry, 8 ft. by 10. In the plan of the second story is the steward's room, 14 ft. by 15; spare room, 14 ft. by 15; attendant's room, 14 ft. by 19; store-room, 14 ft. by 15; room for violent patients, 14 ft. by 20. All the walls and ceilings are lathed and plastered with

two coats, the finishing coat being plaster of Paris, and the entire woodwork usually painted is covered with two coats of paint. The wards are 15 ft. high in the clear from floor to ceiling. Ridge ventilation is provided for the summer months by means of two boxed openings in each ward, carried from the middle line of the ceiling to the ridge. These openings are ten feet apart, and are each 10 feet long by 2½ feet wide. In the winter months the opening at the ridge is to be closed, and ventilation effected in the following manner: A large stove is placed in the middle of the ward. Fresh air is introduced by an air-box 18 inches square, which passes underneath the floor of the ward from side to side, open at each extremity to the external air, and opens in the centre of the ward beneath the stove by means of a register; when a ventilating stove is used, the place of the register is occupied by a pipe, which connects the air-chamber of the stove with the air-box beneath the floor. The pipe of the stove passes up through a close-fitting collar in the ceiling. One foot above the ceiling it enters a shaft or jacket about 24 inches in diameter, which pierces the roof, and extends four feet above; it is covered with a sheet-iron cap, pierced in its turn by the stove-pipe, which is capped in the same manner. At each end of the ward, and two feet from the centre, there is an opening in the ceiling one foot square, from which an air-box passes to a box enclosing the lower mouth of the shaft surrounding the stove-pipe. The heat of the stove-pipe causes a continuous upward current in this shaft, which is supplied by the vitiated air from the ward through the air-boxes. In each of the earth-closets there is a ventilating shaft six inches square, and the gas-burner of the room is situated directly beneath it. These earth-closets in the regulation hospitals are intended for very sick patients only, accommodations for other patients and the attendants being provided in a suitable detached building. A small detached building is also intended to be provided for the purposes of a dead house; and cases of small-pox and other contagious diseases are to be treated in hospital tents. In fitting up this building for the Exhibition of 1876, the rooms are occupied as follows. On the first floor a ward, serving for the exhibition of hospital furniture, bedding, and clothing; a room for the exhibition of the models of hospitals, hospital steam vessels, hospital railway cars, ambulances, etc., and for specimens from the Army Medical Museum; while the other rooms are used for the exhibition of medicines, medical stores, and chemicals; surgical instruments, books, blanks, and the publications of the Surgeon-General's Office, mess furniture and utensils, kitchen utensils, and the private office of the surgeon in charge, and the rooms in the second story serve for the exhibition of prosthetic apparatus, litters and stretchers, medical panniers, knapsacks, etc. The five small models of hospitals on exhibition represent a barrack ward, as adopted by the War Department in the summer of 1864, and four of the great general hospitals, so-called, which attained celebrity during the war.

BIOLOGICAL INSTRUMENTS AT THE SCIENTIFIC LOAN COLLECTION.—Among the instruments employed in biological research at the Loan Collection is the original compound instrument constructed in the latter part of the sixteenth century by Zacharias Janssen. In striking contrast to its rude simplicity stand the two microscopes built by Benjamin Martin about the middle of last century; in their size, and the intricacy of their adjustments, they equal or surpass the boldest efforts of contemporary makers. The instrument employed by Lyonet in his famous investigations into the anatomy of *Cossus ligniperda* ought not to be overlooked. It resembles the ordinary dissecting-microscope in use at the present day, the lenses being attached to a small brass table by a curious succession of ball-and-socket joints admitting of universal movement. Microscopes by modern makers are largely represented. They illustrate two leading tendencies: one in the direction of mechanical simplicity; the other, towards specialisation. Instead of one instrument to serve all purposes, there are here a number of models

designed to meet the special needs of the histologist, the chemist, the mineralogist, etc. A microscope (on Ross's model), exhibited by the Geneva Association for Constructing Scientific Instruments, presents a small improvement which seems worthy of being more generally adopted: the objectives, instead of being screwed on to the tube, are kept in position by a pair of cylindrical spring pincers; this enables one power to be substituted for another with much less expenditure of time than is usually required for the purpose. The collection of accessory apparatus includes a series of moist and hot chambers, and one of microtomes. Among the former may be noticed the hot stage of Professor Vogelsang for demonstrating the effects of a rise of temperature on the bubbles of carbonic acid in quartz crystals; the source of heat is a platinum wire stretched to and fro across an annular thermometer bulb, and through which a voltaic current may be made to pass. Also the moist chamber contrived by Dallinger and Drysdale for the continuous observation of minute organisms with the highest powers without allowing the drop of liquid in which they are contained to evaporate. Prof. Klebs exhibits glass chambers in which the multiplication of *Schizomycetes* may be continuously watched. There is a great variety of instruments, some of them very complicated, for cutting thin sections of animal and vegetable structures; among them may be noticed the freezing microtome of Prof. Rutherford; a very simple freezing apparatus by Dr. Pritchard; and microtomes for objects embedded in paraffin, etc., by Krause, Hensen, Klebs, His, and others. The collection is comparatively rich in instruments employed for investigating the physiology of the circulation. Fick's spring kymograph, and several improved models of the mercurial kymograph are exhibited. The largest piece of apparatus in this department is a compound kymograph by Professor Hering of Prague, which includes two mercurial manometers, a spring manometer, chronographic signalling apparatus, and a recording drum on which several curves may be simultaneously inscribed. Vierordt's hæmatometer is of some interest historically. In the case containing M. Marey's contributions may be seen a great many of the instruments figured in his well-known treatise on the circulation: various forms of recording apparatus (combinations of tympana, pneumatic tubes, and writing levers), and the ingenious *ampoules*, by means of which the variations of pressure in the different cavities of the horse's heart may be graphically registered. Most of the sphygmographs exhibited are modifications of Marey's original instrument; among them may be noticed Stein's photosphygmograph, in which a luminous dot projected upon a moving strip of sensitive paper takes the place of the usual writing lever; Sommerbrodt's instrument, which transfers the movements of the arterial wall to a point oscillating in a vertical plane, without the intervention of a spring; Brondgeest's pansphygmograph—a revolving drum, a sphygmograph, a cardiograph, and an instrument for registering the respiratory movements, packed into a box of very moderate size. There is also a collection of sphygmoscopes and sphygmometers, among which the ingenious gas-sphygmoscope of S. Mayer deserves mention. Among the instruments for investigating the respiratory function may be noticed Riegel's double stethograph, the stethocardiograph of Dr. Sanderson, and the instruments for stethometry contrived by Dr. Ransome. Prof. Hering sends a very large machine for carrying on artificial respiration. The pumps usually employed for this purpose only drive air into the lungs, and leave expiration to be performed by the elastic reaction of the pulmonary tissues, and the resilience of the thoracic walls: in Hering's apparatus, expiration is provided for as well as inspiration; any mixture of gases may be substituted for atmospheric air; and the products of respiration may be collected for analysis. Prominent among the apparatus for studying the movements of living organisms are the ingenious contrivances devised by M. Marey for analysing the mechanism of flight in birds and insects, and that of locomotion in man and in the horse. Inquiries into the laws of muscular contrac-

tion are illustrated by a variety of myographs and myoscopes. Starting from the original muscle-balance of Prof. Schwann (1836), there are several forms of the spring myograph of Dubois-Reymond, Rosenthal's rotating myograph, several instruments by Marey, and a differential myograph by Dr. Brunton for investigating the influence of poisons on muscular contractility. Electro-physiological instruments are poorly represented by a few sets of non-polarisable electrodes and commutators. Galvanic batteries for medical use, and a complete set of Middeldorff's galvanocaustic apparatus, though interesting, appear somewhat out of place in an exhibition of this kind. Amongst the thermometric instruments are also several delicate mercurial thermometers by Geissler, Becquerel's thermo-electric needles, and the electrical thermometer of Rosenthal. For the measurement of surface temperatures no more effectual instrument has been devised than a mercurial thermometer with its bulb spirally twisted in a horizontal plane; even Dupré's modified surface-thermometer, which has its bulb roofed in by a concave reflector, is not sufficiently rapid and accurate to meet the requirements of the case. Among the apparatus for investigating the chemical processes going on in the living organism, that of Voit occupies a conspicuous position. It consists essentially of an air-tight chamber in which a small animal, such as a dog or rabbit, may be confined; in connexion with this chamber is an elaborate set of meters, and tubes filled with re-agents, which enable the gases absorbed and given off by the animal to be quantitatively determined during long periods of time. Physiological optics are abundantly illustrated. Foremost in this section come the instruments lent by Prof. Donders, of Utrecht, chiefly intended for investigating the ocular movements, the phenomena of accommodation and refraction, and their anomalies. In the same collection may be seen the neomatometer and neomatograph contrived by the illustrious Dutch physiologist for inquiries into certain psycho-physical processes. Several instruments belonging to the late lamented Von Graefe are exhibited by Dr. Weber, of Darmstadt, and possess more than a merely historical interest. Investigations into the vital phenomena of plants are illustrated by a set of incubating chambers for germination, Reineke's apparatus for measuring the velocity of growth, Cohn's apparatus for demonstrating Knight's experiment on the influence of gravity on the direction of growth in the roots and stems of budding plants. The botanist will likewise feel interested in the plan of the Institute of Vegetable Physiology in the University of Breslau, under the direction of Prof. Cohn. Founded in the year 1866, it has already contributed largely to the advance of botanical investigation; the results of the original work carried on there being published in Cohn's well-known *Beiträge zur Biologie der Pflanzen*. Most of the anatomical models contributed by German makers are decidedly inferior in quality. The Hunterian Museum lends a few specimens illustrating a greatly improved method of mounting skeletons, which enables the constituent bones to be examined on all sides without spoiling the appearance of the articulated skeleton as a whole. A number of huge flowers made of gutta-percha or *papier-mâché*, are exhibited by Brendel, of Berlin. They may be taken to pieces, and their structure demonstrated to a large audience. Three schemata of the circulation, by Donders, Hering, and Rutherford, belong to this department; the ingenious schema of M. Marey is represented only by a diagram. The collection also includes a great variety of craniometric and other apparatus employed in anthropological investigations. To practically demonstrate his process for the partial recovery of poisons after they have been administered in fatal doses, Prof. Sokoloff, of St. Petersburg, shows glass tubes containing:—1. 0.057 gramme prussic acid, of which 0.051 gramme was recovered after sixty days. 2. 0.500 gramme of coniine, of which 0.125 gramme was recovered after forty-five days. 3. 0.300 gramme of nicotine, of which 0.076 gramme was recovered after twenty days.

The London Medical Record.

Authors of Papers, Theses, &c., will assist in the preparation of summaries by our reporters, by forwarding separate copies of their works.

BROWN ON ARSENICAL PAPER-HANGINGS.

The following paper, read by Dr. Francis H. Brown, Surgeon to the Children's Hospital, Boston, before the Boston Society for Medical Observation, is published in the *Boston Medical and Surgical Journal*, May 11, 1876.

During the past year I have had occasion to give advice in a number of cases involving grave symptoms, of long and persistent continuance, and of a nature so masked as to puzzle, for a time, both friends and physicians; but which, from the history and the symptoms, joined with the surroundings which I found in each case, I believe to have been due to arsenical poisoning from wall-papers on living or sleeping-rooms, which the patients had occupied for a longer or shorter time.

It will be remembered that the pigments used by manufactures of arsenical wall-papers are composed very largely of arsenite of copper and of acetoarsenite of copper or Schweinfurth green; the former containing 50 per cent. and the latter 58 per cent. of arsenious acid, which dangerous elements are applied to the paper by size, giving but a feeble cohesion when exposed to the air or to the danger of attrition from various causes. Even the flock papers, which have been looked on as innocuous, often have a layer of arsenical pigment, which in time becomes equally dangerous.

The subject of arsenic-bearing wall-papers has been freely discussed in both home and foreign journals for the past twenty years; nowhere more fully or satisfactorily than in the Massachusetts 'State Board of Health Report' for 1872. Cases and series of cases have been given, some by physicians who have experienced the ill effects in their own persons, and all bearing a striking resemblance to those I have had under notice.

The symptoms in these cases have been of a composite character affecting the system generally, with more marked evidences of disturbance in the digestive and respiratory systems, and with a strong tendency to neuralgic and mental disorder.

In connection with these cases, I shall show specimens of paper from rooms which the patients have occupied, and a considerable number of others which have been offered for sale by manufacturers, and intended for domestic use. The former specimens offer the strongest evidence for the opinion I formed of the disturbing element.

The series of symptoms is very well described in their usual sequence by a non-professional writer in the *British Medical Journal* for July 22, 1871. Referring to a number of cases which occurred in his own family, he says, 'First appeared irritation of the mucous membrane, causing diarrhoea and vomiting, with various other symptoms of severe gastric de-

range, resulting in permanent indigestion; also incessant severe cold in the head, which in one instance lasted for several years without being touched by any remedy; ulcerated throats, with acute inflammation, resembling diphtheria and quinsy; severe spasmodic cough, spasmodic asthma, bronchitis, and congestion of the lungs; soreness of the mouth, lips, and tongue, which appeared as if scalded in patches; inflammation of the eyes and eyelids (the conjunctivæ being invariably bright red), in one case threatening absolute loss of sight; congestion and torpidity of the liver, with the various symptoms resulting therefrom; and severe bilious and feverish attacks. This was, in short, irritation of every organ. In many cases, if not in all, the action of the heart was weakened, and in some palpitation frequently occurred. There were pains in various parts of the body, especially across the shoulders, down the spine and limbs, also in the joints, which were often stiff and swollen; scaling of the skin, and irritating eruptions, which no remedy ever relieved except Turkish baths. The effects upon the nervous system were most remarkable, producing a thoroughly shattered condition; great irritability, depression, and tendency to tears, with unusual prostration of strength. . . . The list also includes giddiness, headache, acute ear-ache, and neuralgia; bleeding at the nose; frightful dreams; hysterical attacks; faintness; cramps, rigor, and numbness of the limbs; rigid spasms and convulsions. The last symptoms developed in the worst cases were loss of memory and threatenings of paralysis, also spasms, with twitchings of the body and limbs.'

CASE I. Mrs. A., a lady, fifty-six years of age, in easy circumstances in life, of a peculiarly active and nervous organisation, of regular habits of life, was exposed in her bed-chamber, for a number of years, to the influence of arsenic paper. She had been previously entirely healthy, never having had any illness other than temporary troubles of small moment. Menstruation ceased to occur within five years without any abnormal symptom, the critical period being only marked by the cessation of the monthly flow.

Twelve years ago she married, and came to live in a home near an inland city. Her chamber was on the ground floor of a large house, and had been newly hung with a paper of a light green hue. The room was occupied only at night, most of the time during the day being spent in other parts of the house, and, in the summer months, in the open air. To this circumstance, of course, is due her freedom from trouble for a considerable period.

Three or four years after occupying the room, or perhaps a little earlier, she began to have a feeling of general malaise. The first thing she recalls is a sensation of exhaustion, which she then thought due to one or two severe falls, but which is now more satisfactorily explained. Being a person of strong will, she made every endeavour to throw off or resist this sensation, but it would as constantly return. It was especially difficult for her to rise in the morning, although awake at a very early hour. The debility increased as the illness went on. She would feel quite well and strong for a time, and would at once experience the sense of prostration on making any attempt at movement, and, at times, on any unusual mental exertion, making the duties of a housekeeper particularly onerous. She speedily increased considerably in weight, from about 125 to 160 pounds;

this condition lasted for some months, and then gave place to emaciation.

At certain intervals afterward the various symptoms of the digestive, nervous, and circulatory systems, which I shall mention, appeared and increased in severity up to the time I saw her, in June, 1875. The precise date of the access of each symptom is unknown, but each had shown itself, either continuously or at intervals, for a number of years before.

I found her in bed, perfectly prostrated, hardly able to move hand or foot; with skin very dry and rough; hands and feet cold or cool to myself and to the patient. I do not recall either the pulse or the temperature, though both were duly noticed at the time. Emaciation was marked; a countenance naturally rosy had become sallow; tongue inflamed, dry, cracked, with brownish coat in centre; gums also dry and angry. The sensation of dryness was apparent to herself, with a feeling as if the mouth were lined with flannel. No sensation of dryness or pain in the throat or oesophagus. Nausea, often about ten P.M., and nearly always when she awakened, but not during the night, unless she happened to be up and about for any purpose. At times a pressure in the stomach; frequent thirst of an evening; seldom during the day; capricious appetite.

During her early years, at her home in Philadelphia, she had often had diarrhoea, but she had been free from it for some years. Two or three years ago it came on at intervals, its presence being ascribed to diet and the usual causes; of late it had become more marked, the discharges being watery and painful. She had never noticed blood. No oppression in breathing; no catarrhal trouble, cough, or other noticeable pulmonary complication. Her eyes had for some time shown signs of weakness and congestion. They had previously been very strong. At last she could not open the lids at night without lifting them with her fingers. At the time I saw her there was marked conjunctivitis, as if from some external irritation. No headache, but an 'aching, tired sensation' in base of the brain, which ran down the spine to the lumbar region. At times, during the past few years and never before, a tenderness in the neighbourhood of the liver, which would pass away after a slight diarrhoea. Her temper was never irritable or much depressed, but her household duties seemed to weigh on her, and were more than ever a responsibility. A carbuncle, or perhaps a large boil on the back, was reported as having occurred three or four years before; otherwise no eruptions, carbuncles, or furunculi. The sleep was more easily disturbed than when in health, and she had often awakened chilly or feverish. The feet and legs, to the knees, were frequently cramped, and had been relieved by warm applications and friction.

The symptoms detailed had always been, to a certain extent, relieved during absence from home; but in about ten days after her return the exhaustion and other evidences of disease would recur, and soon be as bad as ever. The symptoms had been most speedily relieved on coming to the salt water at New York or Boston, and under such circumstances almost entirely disappeared. The air of Philadelphia was less beneficial, but no permanent relief was experienced as long as exposure to poison was renewed on her return home.

The marked symptoms in this case seemed to be of the mucous membranes and the nervous system, to be increasing in severity, alleviated by absence,

but returning on fresh residence, and so apparently due to a local cause. There was no malarial influence in the neighbourhood; the air, though somewhat damp, was pure and healthy; no imperfect drainage. On examining the paper of the room, I found it heavily loaded with arsenic. The patient now recalls the fact that no room in the house was so difficult to clean as her bed-chamber, and servants had made similar remarks. She herself found it almost impossible, for some reason unknown to her, to remain in her room, from the sensation of extreme exhaustion.

CASE II. The husband of this lady had occupied the same room, but his frequent absence from home on business and his out-of-door life had given him less exposure. Previously healthy, he had, soon after his occupancy of the room, begun to have tonsillitis, with dry tongue and mouth, and finally these symptoms continued throughout nearly the entire winter. He increased very markedly in weight, became dyspeptic, and had a foul breath, with a general sensation of malaise. He at last occupied another room at night, and was at once relieved, and has had no sore throat to this day.

CASE III. Mrs. B., an amateur artist, had in like manner a bright green paper on her studio. After spending some time in her room, in which she was occupied several hours each day, she would come out thoroughly exhausted; was very 'logy,' became bloated, and was generally running down. For some time she had had an ulcer on the face, which had not yielded to medical treatment. The library was hung with a green paper of a dangerous hue, and the bed-chamber with still another. A flock paper was also employed in some part of the house—where I do not know. The papers on the studio and chamber, as determined by analysis, are heavy with arsenic; that on the library contains a smaller amount, and a considerable quantity was found in the flock paper. The patient went to New York for some weeks, and remained while the paper was being removed and her house repaired. She speedily improved in health, the ulcer on the face took on a healthy action and was quickly cured, and the sensation of exhaustion disappeared.

CASE IV. Mr. B., the husband of this lady, being less exposed, suffered less, but he was for a considerable time the victim of conjunctivitis, which disappeared on removing the paper from the walls.

CASE V. The case of Mr. C. was very similar to that of the lady first mentioned. His case, however, was marked by more violent febrile manifestations and delirium, and he was for some time in danger of his life. One eye was lost by the sequelæ of conjunctivitis, and the other permanently injured. He was for a long time unable to sleep. A light green paper was on his chamber and sitting room. His removal from the house put an end to the reception of the poison. He is now much better, is recovering strength, flesh, and appetite, and his ability to sleep is now restored.

CASE VI. Mrs. C., the wife of the above, for the three years they had inhabited the arsenic-rooms, had had more or less sore throat, for which she was unable to account. During the first six months after leaving the rooms, she was much better, and at the end of a year was entirely well, and now has no trouble.

CASE VII. Mrs. D. had a green paper on her library, and another on the dining-room. I tested both, and found much arsenic in the former, and a

less amount in the latter. The next day these papers were removed from the walls, and a tendency to dysenteric diarrhoea, which had caused much trouble, at once diminished, and the attacks have been much lighter. Two canaries had died in the library without known cause, except that they showed signs of poison.

CASE VIII. Mr. E. (not my patient), who had slept in a room with a bright green paper for some years, was seriously ill, with symptoms referred to the nervous system and digestive organs. I never saw the patient, but am led to believe the symptoms were of such character as to be due to arsenic. He went to Europe for a change, and another gentleman, who took the house furnished, desired me to examine the paper. I did so, and found it loaded with arsenic.

The paper in the case first mentioned was not removed from the wall until after the marked convalescence of the patient in another room, to which she had been carried. Three or four persons were occupied in the work. One man got a sore mouth, having been previously well, and knowing no reason to account for it; another had every symptom of a cold, and felt a general stiffness of his limbs; a woman was in the room for half an hour, and her throat, previously entirely well, became rough and remained so for some days. A paper-hanger in the same neighbourhood remarked that his mouth was always sore when he put on green paper, and his men often spoke of their eyes becoming inflamed and their hands ulcerated.

I do not feel called on, in relating these cases, to enter upon the discussion of various points which naturally suggest themselves. The method of dissemination of the poison, the susceptibility of some persons to its influence and the immunity of others, and other points, have been often considered, and an opinion has been formed in the matter in the mind of every practitioner of medicine. One point, however, seems worthy of our attention, and cannot be too strongly urged; the necessity of sanitary measures to avert the evils arising from the use of arsenic in wall-papers and other articles of domestic and personal use; the duty of the physician to his patients and the community in warning them against the use of such articles, and the obligation incumbent on the State to enact and enforce laws for the protection of the people from dangers which we know to be insidious, but powerful for great peril to all those exposed to their influence.

It may be true in our land, where 'liberty runs mad,' that the view expressed by Dr. Draper, 'that the rights of individuals and of industrial pursuits are deemed too sacred to allow of excessive restriction, and a prohibitory law to affect the manufacture or use of arsenical pigment would be of questionable force,' a view in which, so far as this particular subject goes, I am inclined to disagree with him. Legislation, with the object in view of preventing the use of arsenical papers, has been employed in some of the more despotic nations of Europe, where the care of the citizen is considered of the utmost importance to the State. The case of the gentleman who returned to his house to find it in the possession of the sanitary police, engaged in removing a beautiful arsenical paper which he had just applied to his walls, is in point. The laws relating to slaughtering cattle, and preparing meat for the market, met with vigorous opposition a few years ago, but they are now looked on, even by the butchers themselves, as

highly salutary, and no hindrance to private rights or emoluments.

The fact that the most beautiful, the most delicate, and the most easily manufactured green colour is produced from arsenic, will always offer a strong incentive to manufacturers of wall-paper, to painters, makers of cloth fabrics, confectionery, card stock, and other materials in the arts.

As an adjunct to legislation, or to take its place, if such a course be impossible, it seems incumbent on physicians to act as instructors to the community. I fully agree with Dr. Draper, to quote once more from his report, that 'if there be awakened in the community some appreciation of the dangers which belong to the indiscriminate use of emerald green colours, there will be no need to invent methods of repression in behalf of the public health; for reasonable people, informed concerning the risks, will not be likely to test their own tolerance of arsenic or to subject their children to it. The demand ceasing, the supply will cease, and a correct taste in colour will find its gratification in agents which possess no poisonous character.' It is safer, however, to consider that a certain proportion of the community is not 'reasonable,' and that they are at once thoughtless and careless of the safety of themselves and of those around them. To gain the needed information the public requires frequent and often-repeated injunctions from those in whom they have confidence, and I feel it to be a duty of our state and local boards of health not to be neglected, to co-operate with physicians in extending a knowledge of the dangers of arsenic.

Arsenic green is a term which, it would seem, is sufficiently well understood by a considerable proportion of the intelligent members of the community. Large quantities of such papers are, however, still sold to go into the country and to those less careful of the hygienic condition of their households. It is less generally known that the presence of arsenic is not confined to green papers alone, and I show you this evening a number of specimens of wall-papers of various hues which may be looked on as very innocent in their outward appearance, but which I have proved by analysis to contain arsenic in considerable amounts. Many of them have a greenish hue, and in such the arsenical pigments have been used to tone down other colours. It is safe to consider that all wall-papers which contain arsenic, in any proportion whatever, are dangerous elements, in the light of modern sanitary hygiene.

SCHIFF ON POISONING BY FUNGI.

In an article in *L'Imparziale* (nos. 11 and 13), abstracted in *Lo Sperimentale* for July, Professor Schiff remarks that it has been commonly thought that each species of poisonous fungus produces its own special symptoms. An analysis of the phenomena observed, however, shows that such a distinction is inadmissible, since all the differences can be reduced to varieties in the degree of action on different systems of the organism. It is indeed probable that there is in all poisonous fungi one fundamental deleterious principle, and this is probably muscarine, discovered by Schmiedeberg of Dorpat in the *Amanita muscaria*. Other noxious principles, which may co-exist, and vary in different species of fungi, account for the differences which may be presented in the symptoms of individual cases of poisoning.

Muscarine, in the first instance, produces abundant salivation, due especially to an increase of the secretion of the submaxillary gland, while the increase in the secretion of the parotid gland is less. These observations, however, made by Schmiedeberg and by Schiff, who experimented on dogs and cats, are not applicable to man, who in this respect more resembles herbivora, and especially ruminants. This increased salivation, due to the action on the vaso-motor nerves, persists in poisoning by fungi even after the nervous trunk has been divided, which indicates perhaps that the poison acts on the peripheral nervous ramifications.

Muscarine at the same time exercises a depressant action on the heart; the pulse generally becomes larger and slower. With a small dose of the poison, however, there is generally a period of increase in the number of pulsations, and the duration of this period is the longer, the smaller the dose of poison administered. In dogs, the pulsations fall from 140 to 100, 60, 40, and then more slowly, till at last they amount to only nine in the minute. This has been confirmed by various other observers.

With the diminution of the cardiac pulsations, the blood-pressure is reduced. This cannot be considered as dependent on the unfrequency of the pulse, since it is observed where the number of pulsations remains stationary or is even slightly increased; it appears to be due rather to dilatation of the small peripheral vessels.

The respiration is also depressed in proportion to the depression of the pulse; it cannot, however, be said that these phenomena are dependent one on the other. In reptiles, indeed, and in frogs, there may be a very slight change in the respiration, the pulse being very unfrequent.

The abdominal secretions and the movements of the intestines appear to increase under the influence of muscarine. The increase of the secretions is shown in the mucous evacuations, which are also sometimes tinged with blood. Abdominal auscultation, and direct inspection of the bowels after laying open the abdomen, demonstrate the increased intestinal movement; which, however, does not consist so much in an increase of the normal peristaltic action, as in partial, and to a certain extent tonic, contractions.

These are the chief symptoms of poisoning by muscarine. It may be added, the animal which presents these symptoms manifests also partial contractions in the tail and in some of the subcutaneous muscles, due to feeble fibrillary movements of the muscles. Besides, in animals which present the phenomena of poisoning with muscarine, the action of the heart is more easily arrested under the slightest electrical or mechanical irritation of the pneumogastric nerve.

With poisonous fungi, when the stomach is not even freed from them by vomiting, there are, besides the symptoms described as produced by muscarine, others dependent on the central nervous system, on which muscarine does not appear to have any direct action. In poisoning by *Amanita muscaria*, besides the symptoms described, there are restlessness, convulsions (which soon affect the respiratory muscles), dilatation or contraction of the pupils. These symptoms, which resemble those produced by opium and by morphia, have been observed in man.

Respiration is more disturbed by muscarine than by the ingestion of poisonous fungi; and this, perhaps, depends not only on defective innervation, but

also on the mechanical obstruction produced by the accumulation of mucus. This difference of action depends, perhaps, on the fact that muscarine given in the isolated form, is rapidly absorbed and carried into the circulation, while its absorption takes place slowly when poisonous fungi are administered.

There appears to be a very close analogy between the action of Calabar bean and that of poisonous fungi. Calabar bean, however, according to Schmiedeberg, increases the blood-pressure, and, according to Schiff, produces in a greater degree fibrillary contraction of the muscles. There is an alteration of vision, that is, the pupil is dilated or contracted, without defect in the power of accommodation, either from the internal administration of fungi and of muscarine (Böhm of Dorpat) or from Calabar bean and eserine (Schiff). It is only when the extract of Calabar bean or eserine is directly injected into the eye, that contraction of the pupil is always produced (Schmiedeberg, Schiff, etc.).

The symptoms described above are opposite to those which are produced in poisoning by atropia, daturia, and by certain *solanaceæ*. This antagonism has been denied by Rossbach; but it exists; and Schiff has made some experiments to ascertain whether *solanaceæ* are antidotes to poisonous fungi. In the only four experiments which he has been able to make, he has administered datura stramonium to animals poisoned with fungi mixed with fat. Although the pulse was extremely unfrequent, the breathing was very difficult, there was almost absolute immobility, and the animal appeared moribund, yet in one case, only three minutes after the administration of the antidote, the number of pulsations increased, the respiration became more regular, the secretions were diminished; and this improvement gradually became more perceptible, until at the end of an hour and a half there was merely somnolence with partial agitation, which had entirely disappeared at the end of eleven hours. In another case, the administration of daturine produced immediate relief of all the symptoms, except of the cerebral symptoms, which were increased. Daturine, as Schiff has proved by experiments on animals and on himself, produces cerebral phenomena analogous to those arising from poisonous fungi. Daturine produces a remarkable diminution of the secretion of urine. As regards all the other symptoms of poisoning by fungi, however, daturine and the alcoholic extract of stramonium are antagonistic.

It is indeed probable that two toxic substances exist in poisonous fungi; one, muscarine, produces on the circulation, respiration, and secretions, an action opposite to that of daturine and of atropine; while the other produces on the central nervous system an action analogous to that of atropine and of daturine. Some years ago Schiff gave to some guinea-pigs a dose of stramonium, and then a dose of poisonous mushroom, twice as much as was sufficient to cause death; none of the special symptoms of poisoning by muscarine were produced.

He therefore recommends in cases of poisoning by mushrooms the use of atropine, of daturine, or of stramonium in substance or in the form of alcoholic extract, in quantity proportioned to the quantity of poison injected. Lauder Brunton was the first to propose this treatment, basing it on the experiments of Schmiedeberg on the antagonism between muscarine and daturine. Schiff has demonstrated by direct experiment the justice of this proposal.

A. HENRY, M.D.

CORONA ON THE ANTAGONISM BETWEEN MORPHIA AND ATROPIA.

Dr. Corona, in an article in the *Giornale di Medicina Militare* for April and May, describes some experiments which he has made on dogs, rabbits, and frogs, with regard to the antagonistic action of morphia and atropia. The following are the conclusions at which he has arrived.

a. Atropia quickens respiration in an extraordinary manner; morphia, on the other hand, retards it greatly, and modifies it, the inspirations becoming large and deep, and the expirations slower.

b. Morphia produces sleep and deep coma; atropine, on the contrary, produces severe convulsions, but never sleep, in dogs and rabbits.

c. Morphia quickens the movements of the heart; atropia renders them slow.

d. While morphia accelerates the heart's action, the temperature (generally taken in the rectum) falls; atropia, on the other hand, diminishes the heart's action, while the temperature remains stationary or is slightly increased.

e. In the action of atropia, the dilatation of the pupils is the most marked symptom, as sleep is in the case of morphia; with morphia, on the other hand, the pupil is sometimes dilated, sometimes stationary, sometimes contracted. Dr. Corona finds, 1. that dilatation of the pupil occurs in animals principally when the dose of atropine introduced into the blood is relatively mild; 2. that, when the dose of atropine injected into the circulation is large, dilatation does not occur, because both the circular and radiating fibres of the iris are paralysed; 3. that dilatation of the pupil is produced by the injection into the eye of a solution containing a very small fraction of a milligramme of atropia; 4. that the dilatation of the pupil constantly occurs, even when a large quantity of atropia is injected gradually, the other symptoms of poisoning being sudden, in consequence of the rapid elimination of a large portion of the poison.

f. Morphia never produces vaso-motor paralysis; atropia always does, as is clearly shown by observing the ears of rabbits poisoned with it. As regards this: 1. The congested vessels of the ear constantly return to the normal state under the influence of galvanisation of the cervical sympathetic, in rabbits previously poisoned with atropia, and in which the vaso-motor paralysis is at the maximum. 2. During the galvanisation of the sympathetic, the constriction of the vessels is followed by a diminution of temperature, corresponding to the increase attending the vaso-motor paralysis of the ear. 3. In rabbits, 20 centigrammes (0.3 grain) of neutral sulphate of atropia are required on an average to produce vaso-motor paralysis, and the injection must be made at one time; otherwise as much as 70 centigrammes (little more than a grain) may be used without producing this phenomenon, if it be injected in doses of 10 centigrammes at intervals of five minutes.

g. Morphia, while it constantly produces sleep, leaves reflex action intact, and sometimes exalts it; atropia depresses reflex action, and always produces paralysis of the posterior part of the body in animals.

As regards necroscopic results, the following conditions were always observed.

h. The lungs, liver, and spleen, were normal in both cases. The heart and large vessels were always

full of blood; but this was coagulated in poisoning by morphia, fluid and blackish in poisoning by atropia. The meninges in both cases were always congested, while the brain-substance was constantly found to be anæmic. The medulla oblongata and the tubercula quadrigemina were never found hyperæmic, while the meninges covering them were so.

i. As regards the toxic dose, there was very great variation both in regard to the age and the race of the animal. In rabbits, morphia was sometimes fatal in doses of 20 centigrammes (0.3 grain); whilst sometimes as much as 50 centigrammes (0.75 grain) was borne. Sleep and slowness of respiration were, however, constant results even of very small doses. In dogs, the toxic dose was much less. Atropia was tolerated in very large doses; in rabbits as much as one gramme (15 grammes). It was, in many cases, fatal in doses of 50 centigrammes; never in less, except in young and very small animals. Large doses of atropia were tolerated on the first two days, but the animal did not survive the third. Even with small doses, the remarkable quickening of the respiration, the dilatation of the pupils, and the vaso-motor paralysis, were observed.

Experiments made on the pneumogastric nerves during the poisoning, whether by morphia or by atropia, showed that the antagonistic respiratory changes always proceeded from the centres of respiration.

k. Finally, with regard to the result of experiments on the alleged antagonism of atropia and morphia, Dr. Corona makes the following remarks. 1. Morphia was always capable, even in very small doses, of removing the symptoms produced by atropia, and of producing sleep. 2. During morphia sleep, very large doses of atropia did not in the least alter the symptoms due to morphia, nor was the sleep ever found to cease. 3. When atropia was injected in small doses at intervals of ten minutes, although the total quantity was large, its action was more rapidly extinguished by small doses of morphia, than when atropia was injected in a dose of not less than 20 centigrammes. 4. The injection of the two poisons into the veins showed that a much smaller dose was sufficient to produce rapid and grave poisoning; but even then the morphia produced its action instantaneously, and its symptoms always superseded those of atropia. 5. The injection into the veins of large doses of atropia and very small doses of morphia was always followed by sleep, and the manifestation of the symptoms due to atropia was tardy. 6. In all cases, after the disappearance of the symptoms due to morphia, those due to atropia appeared, in intensity proportionate to the largeness of the dose administered for the purpose of counteracting the symptoms due to morphia.

From these results, Dr. Corona concludes that a partial physiological antagonism may be recognised, but that the idea of a mutual therapeutic antagonism cannot be accepted.

He recommends in poisoning by atropia the injection of morphia and its salts, both into the veins and by the hypodermic method, but altogether disapproves of the idea of combating morphia poisoning with atropia, both because very large doses of the latter are incapable of removing the symptoms produced by morphia, and because, even if the latter are temporarily relieved, the still more deadly symptoms due to atropia supervene.

A. HENRY, M.D.

CHARCOT ON THE LOCALISATION OF CEREBRAL DISEASES.

(Continued from page 154.)

On resuming this course of lectures, M. Charcot once more directs the attention of his hearers to the anterior region of the central ganglia, in order to study more closely from the points of view of anatomy and physiological pathology those lesions which are produced therein. This region he has already designated by the term lenticulo-striate, to distinguish it from the posterior or lenticulo-optic region; it comprehends the two anterior thirds of the internal capsule, the head of the nucleus caudatus, and about the two anterior thirds of the nucleus lenticularis. He reminds his hearers of the often repeated observation already noticed in this course, that common motor hemiplegia without anæsthesia is the consequence of lesions affecting the parts just enumerated, on condition that the lesion causes the destruction or the rapid compression of the nervous elements; while, however, lesions even if extended and great, which remain limited to the sphere of the ganglia, cause only slightly marked and passing symptoms; and on the other hand relatively slight lesions affecting the white matter (internal capsule) cause a hemiplegia not only well marked, but of long duration and often incurable. He goes on to seek for the explanation of these differences, and considers first the cause of the relative intensity, and afterwards that of the duration of the symptoms.

In considering the first point, that is, the relative intensity or gravity of the symptoms, he refers to the anatomical constitution of the internal capsule, which is made up of, first, direct peduncular fibres, or fibres which run from the cortex to the peduncle without any communication with the caudate or lenticular nuclei; second, indirect peduncular fibres, which, on the contrary, take their origin in the lenticular nucleus, or the caudate nucleus, and have no relation with the cortex; for the moment, the bundles of fibres passing from the cortex to the nuclei are left out of consideration. He supposes that both the direct and the indirect fibres are centrifugal fibres, transmitting to the periphery motor influences, developed either in the cortex of the brain, or in the lenticular and caudate nuclei. On this hypothesis it is easy to understand how a lesion operating on the inferior portion of the capsule in the neighbourhood of the base of the corona radialis will have for its effect the suppression at once of the influence of the cortex and of the two nuclei, while, on the contrary, a lesion limited to one of the nuclei leaves unimpaired the action of the cortex and the other nucleus. He does not allow undue importance to this theoretical view, but he points out that it agrees with clinical observations made on man, and is not contradicted by experiments on animals, more especially in the higher animals, as the dog. In experiments made on the brains of dogs by MM. Carville and Duret, the following results were obtained. 1. Ablation of the grey matter in the so-called motor centres of the cortex determines a temporary paresis of the limbs on the opposite side of the body. 2. The extirpation of the caudate nucleus determines an analogous but more marked paresis. 3. If the lesion operate, on the other hand, upon the inferior portion of the capsule, it produces a well-marked paralysis of the opposite side of the body. Also, he remarks, it may be well to recall the fact that MM. Carville and Duret, as well as M. Veyssière, found that lesions of the posterior part

of the capsula interna produce, as has been observed in man, crossed mehi-anæsthesia.

These considerations will also serve to explain the second point, namely, the relative duration of the symptoms, which are temporary if the lesion be limited to the substance of the nuclei, while, on the other hand, if it involve the capsule, they are of long duration, and often even absolutely incurable. It is easy to understand that the fibres of the capsule being intact, the nuclei and the motor centres can mutually supplement each other's function, and heads, not only can one nucleus supplement the other, but such supplementation may occur between different parts of the same nucleus. It is established, at least for the nucleus caudatus, that partial destructive lesions operating upon different parts of this nucleus produce uniformly a more or less marked transitory but total hemiplegia, affecting both the limbs and the face. It appears, as Dr. Hughlings Jackson has said, as if each part of the corpus striatum represented in miniature the entire ganglion. Experiments, moreover, have shown that partial excitation of the caudate nucleus produce movements of all the opposite side of the body, and not dissociated movements, localised, for example, in a limb or a part of a limb. On the other hand, in the case of a destructive lesion of the internal capsule, only a slow regeneration of the nervous elements can permit the gradual re-establishment of its functions. This process of repair, if it really sometimes occur, does so only in exceptional cases; and, as a rule, lesions which destroy to a certain extent the motor fibres of the capsule, have for their almost necessary consequences the production of a fasciculated lesion, which commencing immediately below the injury may be followed on the same side in the base of the peduncles, the pons Varolii, the anterior pyramid, to the decussation in the medulla, and below this on the opposite side along the lateral column to the lumbar enlargement.

These secondary degenerations or descending scleroses are worthy of some attention, for they are undoubtedly among the principal causes of the persistence of motor paralysis, and also, he believes, for the most part occasion the permanent or late contraction which occurs in these cases. In the first place, it is remarkable that localised lesions are not all equally capable of determining the production of consecutive scleroses; thus, some never do so, such as lesions which remain limited to the substance of the ganglia; on the other hand, those affecting the fibres of the internal capsule, in their course between the nucleus lenticularis and the nucleus caudatus, are inevitably followed by secondary sclerosis.

This remarkable fact was clearly made out by Türck in 1851, and since then it has been confirmed by MM. Vulpien and Charcot, and also by M. Boucard. The following facts have also been proved by the same observers. 1. Lesions situated outside the ganglia in the centrum ovale, if they attain certain dimensions, also produce descending sclerosis if they are not too far off the base of the corona radialis. 2. Very superficial lesions of the cortical grey matter, such as those accompanying meningitis, do not produce descending sclerosis. 3. On the other hand, cortical lesions of some depth and extent implicating both grey and white matter without any participation of the central ganglia determine under certain conditions consecutive scleroses as pronounced as those dependent upon a lesion of the anterior part of the internal capsule. These con-

ditions are that the lesion implicate the two ascending convolutions (ascending parietal and ascending frontal) and the adjacent parts of the parietal and frontal lobes. Lesions affecting the occipital lobe, the posterior part of the temporal lobe, the sphenoidal lobe, or the anterior regions of the frontal lobe, are not followed by these descending sclerosis. 4. The seat and extent of the lesion appear to be the two fundamental conditions, the nature of the lesion not having a marked influence provided that it is destructive, and not as in the case of certain tumours which simply push back and separate the medullary elements without interrupting their continuity.

The lecturer next draws attention to certain facts in the anatomy of these sclerosis. They always occupy one-half of the system of the lateral columns; they always affect its whole length to the lower end of the lumbar enlargement; they are always descending, taking origin below the point of lesion, and not to be followed above it. Some of the most prominent characteristics may be observed with the naked eye, such as flattening and narrowing of the corresponding *crus cerebri*, and on section a grey band running through it which never extends beyond the *locus niger*; the grey colouration disappears at the pons Varolii, but is met with again in the medulla, where it occupies the anterior pyramid in the whole of its length on the same side; the pyramid is otherwise thinned and flattened; lower down the denticulations in the medulla appear more distinct than on the normal side; below the decussation in the half of the cord opposite to the lesion, in the situation of the lateral columns, the sclerosis appears in the form of a triangular space of a grey colour outside and in front of the posterior horn, and gradually diminishes in size as the sections are made lower and lower in the cord. Microscopical sections of the cord, properly hardened and prepared, show more exactly the topography of the lesion. The other white fibres and the cornua remain perfectly intact, while both the anterior and posterior roots and the meninges show no trace of alteration. He remarks that there exist analogies from an anatomical point of view between these secondary sclerosis of cerebral origin and those symmetrical primary sclerosis of the lateral columns which he described last year, *à propos* of spinal muscular atrophies. But there are also differences which must be noticed; thus, in this primary sclerosis the lesion is necessarily double, occupying both lateral columns, and in addition it extends wider, involving not only the cerebral but the proper spinal fibres of the lateral columns. Moreover, primary sclerosis has a great tendency to invade adjacent regions, sometimes the white matter, but above all the anterior cornua, which does not occur in secondary sclerosis.

On the other hand, analogies may be noticed in the contractions, at first transient, then permanent, of the limbs with spontaneous or provoked tremors in both diseases. M. Charcot considers that it is not the contraction of the cerebral cicatrix, as Todd thought, that accounts for the appearance of late contractions in hemiplegic subjects, but on the contrary, he considers them due to a chronic myelitis of the lateral columns consequent on the cerebral lesion. Although the sclerosis is developed in consequence of a cerebral lesion, it may acquire to some extent an independent existence; and by reason of this independence, the lesion extends beyond its usual limits to invade neighbouring regions, the cornua, for ex-

ample, producing in this case important modifications in the symptoms, the muscles undergoing a more or less rapid atrophy, and the rigidity caused by contraction giving place to flaccidity. MM. Pierret and Charcot have observed many examples where, in addition to sclerosis of the lateral columns, there has been invasion of the anterior cornua resulting in destruction of their large cells. The invasion of the posterior horns might explain in the same manner the appearance of certain partial anæsthesiæ in ordinary hemiplegia. And, again, the extension of the irritative process either to the whole extent of the lateral column of the same side or even to the lateral column of the opposite side, would account without doubt for the fact that, contrary to common observation, contraction sometimes predominates considerably at a given time in the lower extremity, or even occasionally extends to the lower extremity of the opposite side. Although he has only been considering sclerosis secondary to lesions of the central masses, those produced by lesions of the cortex do not differ from them in any respect. He recalls to mind that the existence of direct peduncular fibres, that is to say, fibres which after emerging from the base of the *crus* traverse the internal capsule without entering the nuclei of the central masses and stop only at the cortical substance, has been admitted as a highly probable hypothesis. Besides the arguments already put forward in its favour it is supported by the experiments already quoted of M. Gudden who, having removed the anterior parts of one hemisphere in very young animals, the central masses, optic thalamus, and corpus striatum remaining intact, found, on examining the parts eight months afterwards, a remarkable atrophy of the internal capsule on the same side, which certainly would not have occurred if the internal capsule were exclusively composed of indirect peduncular fibres terminating in the central ganglia. MM. Carville and Duret found in one of their dogs that a lesion had by chance destroyed the white substance of all the frontal parts of one lobe without directly affecting the central ganglia or the internal capsule; in this case there was a well marked atrophy of the base of the *crus* of the pons and of the anterior pyramid on the corresponding side. The existence in man of these direct fibres seems to be attested by the production of those secondary degenerations which, as has been remarked, develop in consequence of extensive and deep lesions of the cortical grey matter. M. Charcot's observations made at the Salpêtrière have led him to believe that these direct fibres pass only to the ascending parietal and frontal convolutions and their neighbouring parts, for lesions of the cortical substance in these parts only were followed by permanent hemiplegia and secondary sclerosis; parts which correspond to those in the brain of the monkey which have been mapped out by experiment as the centres called psycho-motor, and in which the cortical grey matter contains the largest-sized pyramidal cells.

MOSSO ON THE HYDRAULIC MOVEMENTS OF THE IRIS, AND ON THE ACTION OF SOME SUBSTANCES ON THE PUPIL.

A. Mosso (*Accademia di Medicina di Torino*, 1875) regards as hydraulic movements those movements of the iris which are dependent on filling and emptying the vessels of this structure. The results

of his experiments coincide with those of Grünhagen. If a half per cent. solution of common salt, serum, or defibrinated blood be injected under a high pressure through the carotids into the head of a rabbit two days after death, a change in the pupil occurs. The pupil shortly after death can be dilated by the introduction of a solution of atropine, and can be preserved by taking special precautions.

The hydraulic movements depend upon the arrangement of the vessels of the iris. Leber had already shown how the arteries of the iris collectively arise from the large corona iridis, and run in a radial direction towards the margin of the pupil. Most of them bend round in an arched manner to terminate in the origin of the veins. In order to explain the mechanism of the hydraulic movements from the arrangement of the vessels of the iris, Mosso prepared an artificial iris from a thin walled caoutchouc tube, which was arranged upon a plate of cork. The convolutions of this tube ran here and there between two concentric circles. On the outer circle, which corresponded to the large corona iridis, they were fixed with needles, and at the margin of the pupil they were left free. With this arrangement it can be shown that filling of the vessel corresponds with a diminution of the pupil, and with every emptying of the tube the artificial pupil dilates. In this way Mosso explains many movements of the iris, which were formerly insufficiently explained by the action of muscles and nerves.

Every dilatation of the vessel produces myosis, whilst its contraction is followed by mydriasis. These results the author can confirm on man by means of his plethysmograph. Mosso had formerly found that every deep inspiration is followed by a contraction of all the vessels. If through a small hole made in a visiting card by means of a needle, one looks at a white wall, the movements of one's own iris may be observed. By this simple method the author observed on himself how every deep inspiration and every contraction of the vessels was connected with a dilatation of the pupil.

The myosis depends sometimes only on paralysis of the vessels, and it is a constant phenomenon in the action of substances such as chloroform, ether, chloral, morphia, etc., which dilate vessels and produce sleep. Conversely, mydriasis occurs every time, when either by poisons or through other conditions, the vessels contract.

Lastly, the author has found that when the pupil has reached the maximum of dilatation by electrical stimulation of the sympathetic in the neck, electrical stimulation of the oculo-motor within the cranium, or an intense light, can contract the pupil, without, however, producing the minimum of contraction. Conversely, when by action of light the pupil has been almost caused to disappear, it can be slightly dilated by stimulation of the sympathetic, without, however, attaining its maximum.

W. STIRLING, D.Sc., M.D.

SCHMIDT ON THE RELATION OF THE COAGULATION OF FIBRIN TO THE COLOURLESS ELEMENTS OF THE BLOOD.

A paper on this subject, by Alexander Schmidt, is contained in *Pflüger's Archiv*, vol. xi. p. 515, and *Centralblatt für die Medicinischen Wissenschaften*, no. 25, 1876.

1. *On the Origin of the Fibrin-Ferment.*—It can be easily shown that the coloured corpuscles have nothing whatever to do with the fibrin-ferment. 1. There are fluids which, though containing no coloured corpuscles, coagulate after removal from the body; from the serum, by precipitation by alcohol, a solution of the ferment may be prepared. 2. Plasma of horse's blood poured off from the red blood-corpuscles which had been allowed to subside, contained at the moment of their separation from the blood-corpuscles only traces of the ferment. Nevertheless it coagulated at the ordinary temperature, and produced serum containing a ferment. 3. If, for the preparation of the fibrin-ferment, defibrinated horses' blood be employed in which the corpuscles have been allowed to subside, solutions of less potency are obtained from the lower layers consisting almost entirely of blood-corpuscles than from the upper. In non-defibrinated blood from the lower layers consisting of blood-corpuscles, no active solution of the ferment can be obtained. The source of the fibrin-ferment is the colourless blood-corpuscles; it arises from these after removal of the blood from the body, and then passes into the fluid. The proof of this is shown by filtration of the plasma. If the blood of a horse be caught in a glass vessel, placed in ice, and the blood-corpuscles allowed to subside when the temperature has fallen to 0° C., and the plasma filtered through several sheets of filtering paper into a vessel at 0° C., a perfectly clear, generally somewhat red coloured filtrate quite free from blood-corpuscles, which only shows the slightest tendency to the formation of fibrin, is obtained. If a portion of filtered and of non-filtered plasma be exposed at the ordinary temperature of the room, the former coagulates much later than the latter, and the coagulation does not end for a very long time. Complete absence of coagulation is therefore not to be expected, because the blood-corpuscles begin to form the ferment at once after their removal from the body, and this process cannot be instantaneously prevented by cooling. When the filtered fluid is allowed to stand, the amount of the fibrin remains unchanged, whilst that of the non-filtered fluid continually increases. This difference between filtered and non-filtered plasma can be tolerably completely prevented, if the plasma be warmed to 10° or 20° Cent. for several minutes before filtration, and then cooled. The residue extracted with water is dissolved in weak alkaline fluid, and consists of a weak opalescent solution of fibrinoplastic substance, containing only traces of ferment. Corresponding to these observations, transudations which appear to be turbid through the presence of colourless elements regularly coagulate; whilst perfectly clear transudations show no tendency to spontaneous coagulation, which, however, occurs on the addition of the ferment. The dependence of coagulation on the colourless corpuscles can also be shown by adding various quantities of suspended colourless corpuscles to the plasma; that portion to which the largest number of corpuscles has been added coagulates much more rapidly than the others. If two portions of the same plasma be taken, and one of these be left to itself, whilst the blood-corpuscles in the other are distributed regularly by repeated stirring, the subsided layer coagulates first in the first quantity, then the second quantity, and lastly, though much later, the fluid standing above the coagulum. This experiment shows that the impulse to coagulation does in fact proceed from the

lymph-corpuscles. The action of non-crystallised hæmaglobin in accelerating coagulation occurs more pronouncedly, the smaller amount of ferment in solution, and the slower it coagulates without the addition of hæmaglobin. Solutions of crystallised hæmaglobin do not produce any accelerating effect.

II. *On the Origin of Fibrino-plastic Substance.*—If plasma be filtered and the residue extracted with water and then treated with slightly alkaline water, a filtrate is obtained which contains a considerable amount of fibrino-plastic substance in solution. The residue on the filter consists only of colourless blood-corpuscles, from which by solution fibrino-plastic substance has exuded. The objection that the filter residue contains fibrino-plastic substance, which has no connection with the colourless corpuscles, and excreted in consequence of the cooling, is refuted by the fact that filtered plasma is able to dissolve fibrino-plastic substances added to it. Fine granules are excreted from the plasma. These do not consist of fibrino-plastic substance, but are the remains of disintegrated colourless corpuscles which are constantly mixed with the fibrin, and at the first are easily recognised as such, but in the later stages of coagulation disappear more and more. The decomposition products of the colourless corpuscles increase the weight of the fibrin. This fact can be proved by estimating the amount of fibrin in the filtered plasma. A filtrate completely free from fibrino-plastic substance is never obtained, because the disintegration of blood-corpuscles can never be entirely avoided. Nevertheless the author obtained from filtered plasma only 0.35—0.45 per cent. against 0.5—0.7 from the non-filtered. The amount of fibrin obtained from the filtered plasma when a solution of fibrino-plastic substance is prepared from the colourless elements and added to the filtered plasma. The difference in the quantity of the fibrin produced becomes much greater when the plasma before filtration is treated with twelve to fifteen times its volume of water. In this case also by the addition of fibrino-plastic substance the amount of fibrin is again increased. Plasma diluted with ten to fifteen times its volume of water remains fluid for an unlimited time at 0° Cent. The colourless corpuscles sink rapidly, so that the supernatant fluid can be poured off after twenty-four hours, and the blood-corpuscles can be purified by washing with cold water. If after washing they be mixed with a solution of fibrinogen, or better, if fibrino-plastic substance precipitated by carbonic acid or acetic acid and suspended in water be added to the fibrinogen fluid, there results an exceedingly slow coagulation, because only traces of ferment are present.

We have now to ask whether the colourless corpuscles also contain fibrinogen. This question is to be answered in the negative for mammalian blood; for if the washed corpuscles be dissolved in weak alkali and fibrin-ferment be added, coagulation never occurs. On the contrary, the solution obtained from the corpuscles of the blood of birds and of amphibians always exhibits a spontaneous coagulation. The fibrin of the blood of amphibians is characterised by its greater solubility in alkalies and acetic acid, but becomes, however, less soluble by washing with water. Frogs' blood coagulates very rapidly, but again becomes fluid in the course of forty-six hours by the fibrin dissolving in the alkaline serum. If the blood-corpuscles be allowed to subside in the defibrinated blood, and the serum poured off, by the addition of water and the solution of the blood-cor-

puscles, a new coagulation occurs, which again becomes dissolved in several hours. The blood-corpuscles, therefore, of the frog undoubtedly contain fibrinogen; and also those of the bird. Whether this proceeds from the colourless or the coloured corpuscles is doubtful. The assumption that similar conditions are true for the coloured corpuscles of mammalian blood, can at present be neither refuted nor proved. WM. STIRLING, D.Sc., M.D.

SINKS ON A CASE OF TRAUMATIC ANEURISM OF THE RIGHT SUBCLAVIAN ARTERY FROM GUN-SHOT WOUND: TREATED BY DIGITAL COMPRESSION WITH SUCCESS.

Dr. T. Sinks, of Leavenworth, Kansas, reports the following case in the *Richmond and Louisville Medical Journal*, January, 1876.

This is in many respects one of the most extraordinary and interesting cases of injury to a large artery which is contained in the annals of surgery. The patient, a man fifty-one years of age, was shot with a pistol carrying a bullet which weighed $\frac{1}{4}$ oz., and measured $\frac{3}{8}$ in. in diameter, at 10 P.M., May 10, 1875. It was fired so close to the man as to singe his face and whiskers—the clavicle was comminuted, and the bullet, passing across the subclavian artery, 'lodged somewhere in his body.' The occurrence took place in the opera; the wounded man walked up about six to ten steps, then twelve feet across a floor, and sat down on a chair, and then the surgeon, who was in the building, saw him. A stream of bright arterial blood was flowing up perpendicularly from the wound, 'about an inch in height and $\frac{3}{8}$ in. in diameter.' He fainted in about six seconds; respiration and pulse ceased, and he was thought to be dead. This might have been as much as two minutes after the receipt of the wound, but the time probably did not exceed one minute. Very shortly afterwards, a little feeble respiration recommenced, and in about fifteen minutes a feeble pulse could be detected in the left wrist. The surgeon had inserted his little finger into the wound immediately after it was exposed, and found that the bone was perforated by a circular opening with serrated edges, and was also fractured across; but he was immediately 'pushed away by the surging crowd around,' and no further examination was made at any time. The man lay in a state of great prostration for seven hours, during the first two of which he was completely blind, but sensible, and able to distinguish his friends by their voices; and then he underwent a series of depressions, in which the pulse 'became imperceptible, the respirations slow and laboured, the surface cold and clammy, with loud expressions of agony,' with intervening reaction. The frequency of these depressions became less, and after lying for seven hours, where he was first seen, he was well enough to be removed to his home, where a full hypodermic injection of morphia procured sleep, and at 10 A.M. (twelve hours after the receipt of the injury), he was undressed and put to bed. At that time a large and firm coagulum had formed around the wound. Thirty-two hours after the wound, it was found that a large traumatic aneurism had formed, which extended some distance above, and a greater distance below the clavicle with well marked thrill and bruit, but its exact limits could not as yet be defined. Auscultation revealed the existence of a large collection of fluid

in the posterior part of the right pleural cavity, leading to the inference that the costal pleura had been wounded. A consultation of neighbouring practitioners, including two army surgeons, was now held, to decide what course should be pursued. An attempt to find and tie the wounded vessel appeared too dangerous; the ligature of the first part of the subclavian would be exceedingly difficult in the state of the parts and by no means sure to cure the aneurism, besides that all known cases of this operation had proved fatal. It was therefore decided 'to watch the patient closely, preserve as nearly as possible absolute immobility of the shoulder, keep him on low diet for the purpose of subduing the impulse of the heart, hope for a sacculation of the aneurism and a closure of the wound without a degree of suppuration that would undermine the feeble security thus provided by nature, and to leave the question of an operation for ulterior consideration.' At the same time, arrangements were made for suppressing external hæmorrhage if it should supervene. This, however, was not the case. Several severe attacks of prostration during the next few days threatened his life; in the last of which he seemed to be dying, and, in fact, it was thought that he would be dead in a few minutes; but he slowly recovered, and from this time had no similar attacks. They were thought to be due to accumulations of blood in the pleura, from the injury; and it was believed that during the prolonged syncope which accompanied the last attack the injured vessels had become closed. The limb gradually recovered itself from this time, and in six weeks the respiration on that side was natural. The fracture became consolidated, and the wound healed after exfoliation of some fragments in six weeks, nor did any further bleeding take place. There was at first much numbness in the fingers of the right hand, which gradually subsided; but the second, third, and fourth fingers of the left hand from some unexplained cause lost sensation, and this had not been entirely regained at the date of the report. [It must be recollected that the course and position of the ball remained quite unknown.—*Rep.*] As the swelling subsided, the outline of the tumour became more plain, and in four weeks from the time of the injury it was quite defined; and now it was ascertained that pressure on the trunk of the subclavian against the first rib completely stopped the pulsation of the aneurism, proving conclusively that the vessel injured must have been the trunk, and not one of the branches which are given off at a higher point. The question now arose, between ligature of the third part of the subclavian artery (which would have been quite feasible) and compression. It was decided to attempt the cure by the latter measure; and on June 10 intermitting digital compression was commenced for fifteen or twenty minutes three times a day. This duration of pressure was all that could be borne, from the numbness and pain which it produced in the hand and arm. Great benefit seemed after a time to be produced by direct pressure on the sac also. On July 2 (he having in the interval been able to bear a longer continuance of pressure) continuous pressure was commenced and kept up for 186 hours, except a slight relaxation for eating and bathing; the pressure not being so strong as quite to check the flow of blood into the sac, 'but enough to stop the impulse or throb of the tumour.' On July 4, for the first time, the pulse was detected in

the right radial artery, and pulsation could be felt along the whole of the brachial. On July 11 compression was resumed, and continued as before—day and night—until July 22, when the soreness of the skin compelled its discontinuance. It was now possible to make out the outline of the artery and of the tumour. The former ran downwards and inwards, in reference to the wound, instead of obliquely towards the axilla; and the extremity of the artery was funnel-shaped, the aneurismal sac being bulbous and very little larger than the dilated artery. Very slight pressure sufficed now to stop all pulsation and thrill. No increase of thickness could at any time be detected in the walls of the sac, and it was believed that the cure was produced not by lamination of clot, but exclusively by contraction of the sac. On August 30 he was sufficiently recovered to be allowed to travel to New York, being instructed to maintain compression himself as long as any aneurismal bruit existed. The latter, however, had by this time become much more faint. It is unnecessary to follow the further history of the case, which presented no feature of interest. The author concludes with a short *résumé* of the more prominent features of interest in this extraordinary case, viz., the imminent danger from pressure of blood on the lungs, the remarkable absence of recurrent hæmorrhage and of all suppuration, and the great success of digital compression. The agents in carrying out this prolonged and difficult operation were the patient's wife and brother (and latterly himself) during the day, and four medical students and the clerks in the Post Office at night.

Dr. Sinks also refers to the writings of various authors, including the present reporter, to show the great dangers which beset any attempt to tie the subclavian under these circumstances, the possibility of successful compression, and the superiority of the digital to all other forms of compression. As an authentic account of recovery after a gunshot wound of the subclavian artery, the case has undoubtedly a very great value in surgical literature.

T. HOLMES.

DELAFIELD ON SOME FORMS OF DYSPEPSIA.

This is No. 4 of Vol. II. of a series of American Clinical Lectures, edited by Dr. E. C. Seguin, and published by G. P. Putnam's Sons, New York. Dr. Francis Delafield is known by his *Handbook of Post mortem Examinations*, and other pathological publications. In this clinical lecture he states that he believes it possible, in many cases, to distinguish between cases of dyspepsia dependent upon disease of the stomach, those due respectively to the condition of the small intestine and of the large intestine, and those due to disease of the liver. Those of the pancreas are less easy to locate. He does not deny that all the organs named may be involved in many cases.

The symptoms of dyspepsia due to an abnormal state of the stomach are—nausea, vomiting, pain, loss of appetite, eructations of gas and of sour fluid. The vomited matters consist only of food, or of food mixed with a sour fluid; of this the patient may vomit several quarts during each attack. The pain is regularly followed by a desire to vomit, and after this is done the pain ceases. A fragment of bread, not larger than a chestnut, remaining in the stomach, is sometimes sufficient to keep up the pain and retching for hours, until it is expelled. The

appetite is usually small, capricious, and unnatural. If the disease be of long standing and severe, the patients lose flesh and strength, and present a very deplorable appearance. The lesions consist in a chronic inflammation of the mucous coat of the stomach, with loss of power in the muscular coat. The inner surface of the organ is constantly coated with an increased quantity of tenacious mucus. The connective tissue between the gastric tubules is increased in amount, and the tubules themselves become atrophied. The stomach is sometimes found very small, in other cases much dilated. The milder cases can often be cured by regulating the diet and life of the patient, without much resort to medical treatment. In the severer cases, Dr. Delafield recommends the daily use of the stomach-pump; he advises throwing in about six ounces of tepid water, and then reversing the action, repeating this till the water comes out quite clear, without any fragments. Adult stomachs will hold about twenty-five ounces; more than this gives distress. The best time for washing out is the hour at which the patient has been accustomed to have his attacks of vomiting. Two cases are given in illustration.

Where the small intestine is affected, the chief symptom is pain, referred to any part of the abdominal cavity—a constant dull pain, not like colic; it occurs when the stomach is full or empty, whether the food be spare and simple, or abundant and rich. The use of liquor will usually stop it for a short time. Sometimes it comes on at a particular time of the day. There may be nausea, but not vomiting. The nausea is apt to occur in the morning. The bowels may continue to act with perfect regularity. The appetite is often good. Flatulence is common, but not constant. The patients are up and about, and able to attend to their business, but feel languid and good for nothing. The drugs usually indicated are cubebs, ipecacuanha, and assafoetida. Of cubebs, ten grains of the powder, or twenty minims of the tincture, are to be given three or four times a day. Ipecacuanha is given at first in small doses—one-eighth of a grain, and then increased gradually up to one to four grains three times a day; assafoetida in four-grain sugar-coated pills, or as pilula galbani composita. Horse-exercise is often useful. Walking seldom does good. Travelling from place to place is often of service, if carried through many months.

Dyspepsia due to the liver may be clinically divided, says Dr. Delafield, into two classes. In the first class are the florid, stout, and muscular; in the second, the pallid, spare, and feeble. In the first class, the patients seem to be well nourished, but not to get rid of the excrementitious portions of food, etc. In the second, the patient is imperfectly nourished. In one case, the tissues are over-manured, but badly drained; in the other they are well enough drained, but not manured at all. In patients belonging to the second class, flatulence, headache, queer nervous feelings, hypochondriasis, irregular heart, shoulder-tip pain, constipation, and oxaluria, or even phosphaturia, are all common symptoms. In the treatment, a full and nutritious, but carefully regulated diet, with wines, ales, or spirits, in many cases, and even cream and cod-liver oil, may be of use. Strychnia, aloes, sulphate of magnesia and rhubarb, and podophyllin, may all be of service to relieve the constipation. Bromide of potassium, assafoetida, and guarana, are useful for the nervous symptoms. Above all, mineral acids are recommended. Exercise

should be taken in the open air; in young persons, cold bathing should be used. These cases may be mistaken for congestion of the brain, paraplegia, uterine disease, heart-disease, and even phthisis by careless or inexperienced practitioners. Liver dyspeptics of the other class are often rosy, live well, drink, and use tobacco freely. Indeed, they often take a good deal of exercise. They have, however, similar depression of spirits and hypochondriasis—less headache, but more vertigo—sometimes this may go on to loss of consciousness. The appetite is usually good. The bowels are either constipated or regular. There is often diarrhoea from slight causes. The urine is very apt to contain excess of uric acid or urates. They are often greatly relieved, even for days, by purgatives. The elements of successful treatment are—first, entire absence of every kind of alcoholic drink. Tobacco should be entirely prohibited. Active exercise is required, and sometimes even violent gymnastics. The natural alkaline and sulphur waters often benefit them greatly.

In dyspepsia due to the large intestine, the chief symptom is constipation. It is most common in old people. There may be slight diarrhoea; colic is often present. The patient is much prostrated, vomits his food, and may even take to bed. But opiates only do harm in the long run. A mild laxative, such as the ordinary dinner pill, often relieves at once. In more severe cases, there is often great loss of strength. Nothing relieves the constipation, although the patients often get a number of liquid stools. The state of the rectum should be learnt in such cases by a digital examination. If the rectum be found full, it must be emptied by the scoop, or repeated washing out. The patient should now be watched carefully to see that fæces do not accumulate. Aloes and strychnine are often of service in these cases, to assist the action of the large intestines.

In all cases of dyspepsia, the symptoms should be analysed, and an attempt made to refer them to the different viscera to which they belong.

[The reporter thinks especial interest attaches itself to this paper on dyspepsia, as, rightly or wrongly, a belief exists in England that our American cousins, although not enjoying a monopoly of dyspepsia, still far exceed us in the number and frequency of the disorders of digestion prevalent among them. The forms sketched above are, however, familiar to English readers, and the use of the stomach-pump in the cases described has also been practised in England, France, and Germany for some years, in special cases. It will be seen, however, that Dr. Delafield advises the daily use of the instrument, and gives two successful cases in illustration. The reporter fully believes that cubebs deserves to be used more than it is, in the class of cases described as due to disorders of the small intestine.—*Rep.*]

W. BATHURST WOODMAN.

BERTALOT ON TUBERCULAR MENINGITIS IN CHILDREN.

Dr. H. Bertalot, of Pfeddersheim (*Fahrbuch für Kinderheilkunde*, Band ix. Heft 3), after an interesting account of the early literature of the disease, relates his experience of twenty-four cases distributed over a period of fifteen years, and comprising those only in which a *post mortem* examination was made.

Fourteen were boys, ten were girls. Two cases oc-

curred in the first year of life, seven in the second, five in the third, three in the fourth, three in the twelfth, and one each in the fifth, ninth, tenth, and fourteenth years. The youngest patient was ten weeks old. Twenty-two out of the twenty-four were attacked between November and the end of June. The children were all more or less delicate, they had frequently grown up under bad hygienic conditions, and were generally scrofulous or scrofulo-rhachitic. In twelve there was a distinct hereditary predisposition to tuberculosis; two cases supervened upon chronic coxitis; one upon traumatic erysipelas; two upon pertussis; one upon measles; and one upon the first signs of dentition.

The prodromal symptoms were very various and were often absent; the most constant was wasting. This appeared early, was very gradual in its progress, and was unaccompanied by fever. It frequently spared the face. The other symptoms were pallor, dulness about the eyes, altered expression, indifference to games, depression, diminished or irregular appetite, and alternately relaxed and constipated bowels. The symptoms, in short, were those of the cause of the disease rather than those of the disease itself. Not unfrequently, however, others of a more suspicious character presented themselves in this stage—such as sleepiness, frequently recurring headaches, restless nights with half-opened eyes, terrifying dreams and grinding of teeth. Photophobia appeared but rarely at this period. Older children appeared to be giddy, their gait was unsteady, and they were very forgetful and abstracted.

The symptoms of the disease proper were very differently grouped. Every case had its peculiarities. In many complete, though transient, remissions occurred. The statement of Legendre that cases in which marked pulmonary phthisis has long existed run a very irregular course, was confirmed in only one of the three cases in which this condition was present. Vomiting was absent in only two cases; it varied much, however, in duration and frequency. Most commonly, it occurred once or twice a day. It was rarely repeated after having once ceased for any time, though in one case, after a cessation lasting some days, it reappeared, then ceased once more, and, after a shorter interval, again presented itself. It was accomplished as a rule without exertion, and was unaccompanied by nausea; its immediate cause was usually either sudden change of position or the ingestion of food. Constipation was present in twenty; it generally persisted to the end, and was sometimes very obstinate. In two cases diarrhoea was present throughout; in one of these the bowel was ulcerated (this condition in two others was quite latent); in the other no cause could be discovered. In the remaining two the symptoms began with diarrhoea, though this afterwards gave place to obstinate constipation. Retraction of the abdomen was present in all but three, and in them its form was unchanged. The walls were flaccid in all. Abdominal pain was not common, and in the three cases that were complicated with ulcerated intestines was not noted at all. The tongue, at the commencement, was commonly moist and clean, only in a few cases showing a thick white coating of varying extent; it did not become dry till near the end of the disease. Foul breath, when present, was always a late symptom.

Fever was always present, and in the majority from

the beginning. The temperature never exceeded 103.1° Fahr. On the approach of death it either remained unaltered or showed a gradual rise or fall, though sometimes this was more sudden; thus, in one case it rose rapidly 3.6°, in another it fell to the same extent. The extremities were often cold while the face was burning. The pulse at first was, as a rule frequent; later, except in three of the cases, it became slow and was irritable and remarkably irregular in force, frequency, and intermittence; in one only was the intermission at every third beat. In five, it was cord-like. As death approached it became more frequent in all, and at last often uncountable; at this period also it usually grew regular, or nearly so, and was both smaller and weaker. The skin was nearly always dry, though towards the end of the disease it frequently showed a tendency to become moist. Flushings of the usually pale face were remarkably constant, and were considered of more importance than the *taches cérébrales*, which, indeed, do not appear to have been noted. The eruption described by Forney was partially present in one. Cerebral breathing was observed in all, but it was never an early symptom. Towards the termination respiration became more laboured, and in many cases both more frequent and more superficial.

Headache, either continuous or remittent, and usually frontal, was a very common, and, as a rule, an early symptom. It was entirely absent only in one case. The almost characteristic shriek, to which it probably gives rise, occurred at longer intervals as consciousness began to fade.

Psychical symptoms were never entirely absent; but, in the pronounced form, they were rarely sufficiently early to assist diagnosis. Delirium was most frequent in the older children; in only two cases did it equal in intensity that of purulent meningitis; in the others it was of the muttering variety. As the disease advanced the delirium gradually gave place to somnolence, which, in its turn, passed into coma. This last never appeared suddenly, and when once developed never entirely retroceded, though transient remissions occurred in two cases. General convulsions were, as a rule, late; partial convulsions, involving especially the facial, masticatory, and ocular muscles, early. Trembling, especially of the upper extremities, was slight in the early stage, severe in the later. Strabismus was observed in nearly all—in one as early as the tenth day before death; it was apt to vary in degree, and was most marked on waking the patient. Spastic contractions were commonest in the thumb, which was then forced into the palm; more rarely some of the joints were rigidly flexed. Nuchal contraction, which occasionally passed into opisthotonos, was present in the majority; at the earliest, however, seven days before death. As the disease advanced, the convulsions became both more general and more frequent, and were repeatedly observed to be unilateral. Paralysis, as a rule, was late; the earliest forms were ptosis and strabismus; and in one case the movements of the tongue were affected so that speech became indistinct, and finally unintelligible. Retention of urine was present in three. Incontinence was frequent towards the close. Photophobia, present in some at the beginning, became more marked when the disease was developed, but disappeared with the supervention of coma. Dilatation of one or both pupils then set in. This, however, was in some an early symptom, while in others it was absent throughout. Occa-

sionally contraction followed dilatation. Sluggishness of action existed usually in proportion to the size of the pupil. Oscillation of the eyeballs was never met with. The author took a good deal of trouble with the ophthalmoscope, but never detected either enlargement of the papilla or choroideal tubercles. Hearing appeared to be present almost to the last. The duration of the disease, as nearly as could be made out, was commonly from two to three weeks.

The chief points of importance revealed by the necropsies were that, in twenty-two, other organs were affected; in twenty the bronchial glands were cheesy—one of these being a child ten weeks old. The ventricles were distended with fluid in all; the quantity varying from two to four ounces. Tubercles of the convexity were present in only two cases, and then but scantily. They were never found in the brain-substance; but in three cases tubercular tumours existed, one of which was as large as a walnut. Softening of the stomach was present in three cases. The treatment, which was chiefly locally antiphlogistic, at most, moderated for a time some of the symptoms.

RALPH W. LEFTWICH, M.D.

CROTHERS ON INEBRIETY.

In an article in the *Philadelphia Medical and Surgical Reporter* for June 10, entitled 'Clinical Studies of Inebriety,' Dr. T. D. Crothers, Assistant Superintendent of the New York State Inebriate Asylum, Binghamton, writes as follows. Inebriety exceeds all other affections in its mortality and influence over the physical and mental conditions of life. No other disease is so certainly transmitted, entailing on the future deterioration and final extinction of the race. It is defined as a cerebro-psychical disorder of the nervous system, of the same genera and group of neuroses as that of loco-motor ataxy, progressive muscular atrophy, typho-mania, syphilitic insanity, and many forms of epilepsy. It seems to follow our peculiar civilisation, keeping pace with its industrial activities, and its fierce struggles for wealth and power. It may often be traced in storm-like waves through the changes of political life, the ebb and flow of emigration, and the speculations and social convulsions of the times. The history of inebriety, as a disease, is a repetition of every advance in new fields of medicine. Recognised in the second century of the Christian era by Ulpian, the great Roman jurist, in his digest of laws, it was, eleven centuries later, during the reign of Alonzo the Ninth, of Spain, studied and treated by the State as an affection requiring special laws and management. Three centuries further down, many of the German States endorsed these views, and enacted laws based on them. Then came the observations of Dr. Rush, in America; Professor Platner, of Leipzig, in 1809; and Salvator, of Moscow, in 1817, and many others, who boldly advocated that inebriety was a disease, and could only be reached by special means. From this time down, during the last fifty years, this subject has been agitated by all classes. Although facts, statistics, and observation amply prove that inebriety is a disease of the physical and mental organism, yet the profession are slow to recognise it, wavering between the positive denials of some specialist and the empiric theories of temperance

societies, who believe it a vice. We propose to show, from the clinical study of cases treated at this asylum, that inebriety is both a physical and a mental disorder, at all times and in all cases. However obscure its origin may be, it has always a starting point, in perverted function or disordered cell-growth, and its progress is influenced by definite conditions, and its termination in death or recovery is as fixed and positive as pneumonia or tuberculosis. The following cases bring out prominently the evidence of disease, beyond all power of the patient to check or control.

CASE I. Inebriety proceeding from Physical Lesion arising from Syphilis.—H. B., a merchant, the head of a large, prosperous house, temperate, and in good health, regular in his habits, contracted syphilis in 1859. He had buboes and a slight fever, from which he recovered in a month or more, and resumed business as usual. Two months later he was seized with intense depression, from no cause, and a strong desire for stimulants; this became so intense that he drank freely, and with much satisfaction. In two days it passed away, and three months later returned, more depressing, and could only be satisfied in a similar way. From this time on these paroxysms for liquor, preceded by depression, increased in intensity and frequency. He was examined and treated by eminent physicians, without avail, and all effort on his part to resist and break up this desire was useless. In 1866 these attacks had grown to such an extent that he was incapable of business, suffering at least one week every month or more. He accordingly went to Europe, seeking every means to break up this craving, with but little relief. In 1870 he went back to Europe with his family, visiting Egypt, India, and making long sea-voyages, returning after three years, much improved, the paroxysms only returning at long intervals. His health was good, and his mind clear. Two years later he gave up his business and came here for treatment. The periods of drinking had increased to one every month, lasting from four to eight days, marked by excessive drinking of brandy or alcohol. His health was very much reduced, and incipient *delirium tremens* had appeared. The interval of sobriety was spent in anxious efforts to repair and recover from the effects.

There was no trace of inherited insanity or inebriety in this case. The taste of liquor was unpleasant, and only its effects would drive away its nauseating odours. The desire to drink came on without premonition, and he seemed forced to give way to impulses that his reason denounced. For fifteen years he sought earnestly and faithfully to break away, but failed. The origin here came clearly from the syphilis. This poison producing some lesion of the brain-cells, was manifested in the diseased craving at certain times. Possibly no pathological search could have shown the exact lesion, or revealed any structural changes, but strong diseased impulse existed, from which the patient could not recover.

CASE II. Inebriety from Physical Lesion, beginning in Concussion of the Brain.—B. A., a lawyer, liberally educated, of strong intellect, and temperate, entered the South-western army, as an officer, in 1860. After a few months of active service, he was sent to the hospital, with a severe attack of typhoid pneumonia, attended with much delirium. He recovered after three months of illness, and, after a long furlough, in which he regained all his further strength, he entered the army of the Potomac, in 1862, and while

leading his command at Chancellorville, was made unconscious by the explosion of a shell. Taken back to the hospital, he was found to have no external injury, but to be suffering from concussion of the brain. Active delirium came on, and continued for twenty-one days, after which reason returned, and this period was all a blank to him. He resumed his command, and continued until the close of the war, receiving no injury, and in apparently good health. He had been a strong temperance man from principle, and up to the time of receiving this concussion he had scarcely tasted liquor. Soon after resuming duty he was seized with uncontrollable longings for stimulants, at distinct intervals. This he gratified, with inward satisfaction (privately), during the war. Sometimes two days' or more drinking would only satisfy him. The war over, a return to his profession brought increased longings and periods of gratification. Every means was tried to break up this desire; the taste for liquor was unpleasant, but he was impelled, against all reason, to seek this relief. Chagrined at his weakness, he grew morose and more irritable, would retire to his room when drinking, and become destructive if interfered with. Eating nothing, and in a condition of delirium, followed by a day or more of stupidity, the paroxysm would end in weeks of prostration or fever. This struggle continued until 1869, when, after a sojourn at one of the mineral springs of the South, he resolved to give up, and put himself under an attendant, who would watch over and sustain him. He was in better health, and succeeded in abstaining for two years, although the desire came on at intervals. A dull, wandering pain, called rheumatic, came and went; he noticed, also, in bad weather and changes of the moon, that he felt worse. At these times the attendant would watch with him, using all means to divert his mind and build up the body. In 1871 he received the sudden news of the death of a brother, and unconsciously he began to drink again, and only after a week did he realise his situation. From this time on his course was one of protracted and severe paroxysms of drinking, the intervals growing shorter, and the cutaneous sensations becoming more and more perverted. *Delirium tremens*, in a slight form, appeared, memory failed, and rheumatic pains increased. Fatigue or excitement on any unusual circumstance provoked a return of the drinking.

No inherited drunkenness or insanity could be traced in this case. No physical or mental weakness existed until after exposure in the army. The desire for liquor all began after the concussion at Chancellorville. The severity of the injury was apparent in the long time of unconsciousness, and the sequel indicated a profound cerebral disturbance, manifested in uncontrollable inebriety.

CASE III. *Inebriety from some Mental Lesion, followed by Unconscious Paroxysms of Drinking.*—T. H., a baker, of common-school education, of vigorous health, and temperate, a man of wealth and large social and business relations, in 1860 was elected to a prominent office in his native city, requiring great care and responsibility, and frequent visits from home, subject to irregularities and excitements, during which he drank wine moderately. Two years later, at the age of fifty, he drank brandy to excess, impulsively, and without any reason. This came upon him suddenly, and in two or three months a similar paroxysm followed. Retiring from public life and travelling for some months made no difference. These periods were preceded by moroseness and

irritability, and sensations of cold, which he did not realise as premonitory of inebriety. Then he would rush out for liquor, and after one glass all memory of events ceased, and he would wake up after the attack as from a sleep. These periods lasted from a few hours to many days. In 1868 he was brought to this asylum, and went away very much improved after six months' treatment. Three years later he relapsed, and drank excessively, from grief for the loss of some friends, and then continued at variable intervals to drink as before. He was seized with *delirium tremens* on one or two occasions, and made many efforts to recover, without avail. He seemed strangely unconscious of the approach of these attacks, and demented and oblivious to all things after the drinking began. His father was a temperate man up to fifty years of age, then drank to excess, and died a few years later, a drunkard. His grandfather began to drink late in life, and died from its effects.

The peculiar unconsciousness which began at the moment of taking liquor indicated a profound mental disturbance, controlling the entire organism. The predisposition to drink late in life was inherited direct, and appeared to be most intense at fifty years of age. His peculiar circumstances and position in life, at this time, favoured the return of inebriety transmitted from his father. The progress of the case indicated that the presence or absence of certain exciting causes, of both a physical and a psychical origin, largely controlled it.

CASE IV. *Inebriety from Inheritance and Weakened Mental and Physical Powers.*—S. H., a dentist, educated, twenty-six years of age, has been a spasmodic drinker for eleven years. He began during the excitement and triumphs of college life. He had a strong love for liquor, which increased yearly. For the first three or four years he only drank after fatigue or excitement, and not often to intoxication. Later he had spasms of drinking, depending on various exciting causes. During the last four years he has drank alcohol pure, and in all its forms, with absinthe, etc. He has had *delirium tremens* slightly, and convulsions of epileptic character. He is pale, anæmic, and has disordered sensations of heat and cold; is restless, sensitive, and anxious to save himself from this affection. He has no control of his will when he begins to drink. The sight of a bottle, or bar where liquor is sold, will rouse up intense cravings for drink. He has adopted various means to keep away from this temptation. Sometimes he succeeds in abstaining for three or four weeks. He has been unconscious of his drinking during the period, for two years past. He has shown suicidal tendencies, is reckless and quarrelsome, and has premonitory symptoms, such as wildness of the eyes, confused, uneasy movements, before drinking. His father drank wine after meals, and was a morose, passionate man. His mother was a strong, impulsive woman, who alternated between the extreme of exaltation and depression. His grandfather, on his mother's side, was demented, and several of his children were feeble-minded, eccentric persons.

This was a case of well-marked insane diathesis, inherited, skipping one generation, and appearing as impulsive inebriety. The tendency to mania, in some of its obscure forms, was determined by the moderate drinking habits of father and mother, to alcoholism. The early excitement of college life was the starting-point. Cerebral disorganisation had gone on to such an extent, that the least exciting

cause provoked its appearance. No reason or will-power had any influence over these paroxysms.

These cases are presented because they illustrate causes that are not recognised in every instance, particularly when presented in private practice. Knowing the exciting causes, with the conditions and surroundings of the patient, the prognosis of inebriety could be certainly made out before the victim is comparatively powerless to help himself. No society, with moral and social influence, can aid him; nothing but the restraint of an asylum and watchful care, with special treatment, will avail. These cases reveal a degree of mental and physical disorder which cannot be termed by any other name but disease. There are evidently tissue-degenerations and lowered vitality, with perverted mental action, to begin with, and the use of alcohol has precipitated cell-disorganisation, bringing on a storm of morbid impulses, that sweeps away all reason and will-power, and paves the way for a return. The system, from various causes, takes on favourable conditions for inebriety, and this affection follows as a sequence. From the first attack, new conditions of debility begin, dependent on the alcohol taken, and a chronic stage speedily follows. The practical end to be sought is, to distinguish those early causes, and guard against them; and when these are overlooked, and the affection begun, a careful study of them will indicate much of the future treatment essential to final recovery.

PEASLEE ON INCISION AND DISCISSION OF THE CERVIX UTERI.

At a meeting of the New York Academy of Medicine on June 1, 1876 (*New York Medical Record*, June 24) Dr. E. R. Peaslee read an exhaustive paper upon the above subject, in which he referred to the operation of incision as performed by Simpson, discission as performed by Sims, the operation which he himself performed, and the immediate and remote effect following the three varieties.

By incision was meant simply cutting into the substance of the cervix, while by discission was meant severing the cervix, or cutting through it entirely.

Dr. Peaslee employed the general term trachelotomy, and under that head considered the methods, the uses, the abuses, and the true value of the operation, and then explained his own method, which he believed not to be liable to the objections applicable to the operation as originated by Simpson and Sims.

As long as trachelotomy must be recognised in the treatment of stenosis of the cervix uteri, the least objectionable method, of course, should be preferred. The two methods authoritatively practised were: 1, Simpson's, or deep incision of the cervix; 2, Sims's, or discission of the cervix; and 3, he added the superficial incision of the cervix, or his own operation.

Simpson's Operation.—Sir J. F. Simpson, believing that the stenosis was most commonly found at the internal os, devised a metrotome, with which he made incisions for its removal. Dr. Greenhalgh subsequently devised an instrument for the same purpose, which was regarded as more perfect than Simpson's, because it cut more symmetrically, but at the same time cut more extensively, which was decidedly objectionable. Simpson's operation became very common, but Greenhalgh's instrument had generally been preferred. Indeed the operation

became so common that, at last, it had been resorted to where no stricture was present.

Dr. Peaslee then proceeded to consider the immediate and remote effects of the incision of the cervix uteri, and it was maintained that by the operation the shape, size, and normal relations of the cavity of the cervix to the cavity of the body were at once changed. In some cases fatal, and, in many, profuse hæmorrhage had occurred; in others pelvic cellulitis and septic peritonitis had been developed, which had proved fatal. Dr. Peaslee was surprised that such results had not followed the operation far more frequently. For, by the use of Greenhalgh's instrument, when the small incision was made, the wall of the cervix was cut more than one-half through upon both sides, while the large incision went so near through into the peritoneal cavity, that the least inclination of the uterus or the instrument, or a less thickness of the cervical wall than normal, would permit the blade to cut entirely through with the greatest ease.

In all cases in which the operation had been fully resorted to, the form and size of the entire uterine cavity, both corporeal and cervical portion, had been entirely changed, and instead of being of the shape of a flattened hour-glass, the constricted point at the internal os, it had been made bottle-shaped, with the bottom of the bottle knocked out.

Such a cavity might receive menstrual fluid from above, and seminal fluid from below, but it could not retain either. According to Sims, said Dr. Peaslee, the operation cuts altogether too extensively, but the same objection, it was maintained, also held good against Dr. Sims's operation. The immediate dangers, therefore, were hæmorrhage, pelvic cellulitis, and septic peritonitis. No statistics concerning the immediate effects had been published, as they should have been.

Dr. Peaslee then noted Barnes's objection to Greenhalgh's instrument, and also cited the history of a case in which Simpson had performed his operation for the cure of sterility, when stenosis or displacement was not present, and a nearly fatal hæmorrhage ensued.

But the remote effects of the operation were not to be overlooked. Admitting that dysmenorrhœa was dependent upon stenosis, what could be expected in the way of utero-gestation with an uterus that had thus been maimed? The seminal fluid could not be retained, and should conception accidentally take place, gestation would be brought to an end prematurely. The operation was seldom followed by conception, Dr. Peaslee maintained; but when it did occur, abortion was the rule. And if closure of the wound occurred, the woman was not so well off as before the operation, because more or less induration would follow and might increase; and although the dysmenorrhœa might be relieved, the probability of conception and utero-gestation to the end of term was diminished. Sims had objected to the operation because eversion of the labia uteri followed; but it was claimed that the same objection held good against his own operation.

With reference to the uses of the deep incision, it could not be recommended for sterility, since it often prevented conception and favoured abortion. It, however, relieved, and might cure dysmenorrhœa, if dependent upon obstruction; though the tendency, if the wound closed, was to increase the very condition for the relief of which the operation was performed.

Dr. Peaslee rejected the operation for the relief of

dysmenorrhœa even when depending on stenosis, and condemned the metrotome of Greenhalgh altogether. Simpson's instrument might be useful for making incisions in the cervix to aid the removal of uterine fibroids, but under no other circumstances would he recommend it.

Sims's Operation.—Attention was next turned to discission of the cervix uteri, or Sims's operation. It was first practised in January, 1857, and consisted in completely severing with scissors the wall of the cervix, upon both sides, up to the vaginal junction, after which a narrow-bladed knife was introduced into the cavity of the uterus, and the internal os divided, as thought necessary, and the opening through the canal enlarged, which had remained intact after using the scissors. Dr. Peaslee argued that by Sims's operation the cervix was annihilated for all practical purposes, and that the shape and size and value of the uterine cavity was usually destroyed. The immediate effects, therefore, of the operation, were change in the form and size of the uterine canal, frequently alarming hæmorrhage, sometimes pelvic cellulitis, and septic peritonitis, which was almost invariably fatal when it occurred. The fact that the cervix was severed completely to the vaginal junction rendered the operation more dangerous, as far as hæmorrhage was concerned, than Simpson's. Dr. Peaslee had known of four cases in which fatal hæmorrhage followed Sims's operation, and believed that cellulitis and peritonitis were much more likely to follow Sims's than Simpson's, because of the greater surface afforded for the absorption of any septic material. The doctor believed that, if all the fatal cases which had followed the operation had been published, the list would be startling, and it would hardly seem necessary to state that the life of the patient should not be thus jeopardised without the greatest necessity. Yet the history of two cases was selected in which the operation had been performed; but why, Dr. Peaslee was unable to tell. For, in the first instance, the woman was a maiden lady over fifty years of age, had never had dysmenorrhœa, and it was scarcely possible that it could have been done for the relief of sterility. In the second case, there was no dysmenorrhœa or constriction of the cervical canal, and it could hardly have been done for the relief of sterility, because the woman had been married only five months.

Such facts could be explained only upon the ground of a mania which practitioners sometimes had for performing special operations. The change produced by Sims's operation, it was believed, would usually relieve the dysmenorrhœa if dependent upon constriction, but it would probably prevent conception, and, if impregnation should take place, abortion would almost certainly follow. Dr. Peaslee maintained that, when such complete incisions through the cervical wall were made, they should be treated the same as rupture of the cervix in parturition, and closed as soon as possible. It was remarked that discission had been performed for the cure of flexions of the uterus; but such an operation for such a purpose was regarded as something like dividing the sphincter ani muscle for the sake of affording relief to a constriction in the sigmoid flexure of the colon. Such an operation could do nothing for the relief of a flexion except to relieve the congestion, and that would be much more safely accomplished by the application of a half-dozen leeches.

Dr. Peaslee referred to the sagittal incision recommended by Sims for ante flexion, and endorsed by Barnes. It was performed by dragging the posterior wall of the cervix as low down as possible, and then slitting it up to the vaginal junction, after which a narrow knife was passed into the canal and an incision made, so as to bring the cut exactly in a line with the axis of the cavity of the uterus.

If that could accomplish all it promised, there was a better way to bring it about, said Dr. Peaslee; and he then added that the operation in ante flexion was impossible; it never had been and never could be performed. There was also an unsurmountable objection to the performance of the operation for displacement; since, even if it could be accomplished, it ignored the very first indication in the treatment of all displacements, viz. to restore the uterus to its normal position. An incision made in the manner referred to, for the purpose of replacing a uterus, first of all left it in its malposition. But the operation did not effect what had been proposed, because in that condition of the uterus its performance was absolutely impossible. For the axis of the cavity of the cervix met the axis of the cavity of the body at an angle of 165° , and a continuation of the line of the axis of the cavity of the body would bring it through the cervical wall nearly to the vaginal junction when the uterus was in its normal position.

Now let the body of the uterus fall forward a little, and it was found that the line of the incision, being a continuation of the axis of the cavity of the body, went through into the peritoneal cavity. In the second and third degrees of ante flexion the line would not enter the vagina at all; but, on the contrary, in the third degree at least, would fall pretty well towards the woman's umbilicus.

In all cases of flexion or curvature of the cervix the operation could be performed, but that was an entirely different state of affairs, and for their relief the operation was a proper one. It should, therefore, be restricted to such cases of curvature and flexion, and never attempted in cases of ante flexion; for, in the latter condition, it never had been and never could be performed.

Dr. Peaslee then referred to the diagrams which had appeared in nearly every work published upon diseases of women within the past ten years, and had passed unchallenged. (They can be found in the last edition of Thomas's work on "Diseases of Women," at pages 412 and 413.) From his study of the operation, he had come to regard them as visionary and fallacious.

With regard, then, to discission as a means of cure for sterility and dysmenorrhœa, Dr. Peaslee rejected it; and farther, knew of no condition in which it could be recommended, unless it was employed to assist in the removal of fibroids; and then the unilateral incision was, as a rule, all that was required. No statistics regarding the success of Sims's operation for the cure of sterility alone had been published.

1. Deep incision and complete discission of the cervix uteri were attended by certain immediate dangers, and were productive of certain remote consequences prejudicial to the child-bearing function of the woman. Of those there were profuse, perhaps fatal, hæmorrhage, pelvic cellulitis, septic peritonitis, sterility, and abortion.

2. Those risks and effects were all due to the extensive division of the walls of the cervix, and the consequent enlargement of its cavity; and with the

sole compensation of relieving the symptoms or curing dysmenorrhœa, if dependent upon stenosis.

The question then arose, could such extensive division be so far avoided as to avoid these risks and at the same time remove the condition that predisposed to sterility and dysmenorrhœa?

To answer the question properly, it became necessary to study the calibre of the cervical canal, and determine the size necessary to relieve the dysmenorrhœa and favour conception.

It was laid down that the normal cervical canal in the imparous woman was one-seventh of an inch in diameter at the internal os, and one-fifth of an inch in diameter at the external os. The larger size of the external os had reference to conception, and had no special influence against dysmenorrhœa, since the menstrual fluid after passing through the internal os could be conveyed to the vagina without difficulty through a canal of the same size.

In the parous woman, the internal os remained nearly twice as large as in the imparous, and was about one-fifth of an inch in diameter, while the external os was increased in size in nearly the same ratio, and was three-tenths of an inch in diameter.

If, therefore, an internal and external os existed of these sizes, the woman would be insured against sterility and dysmenorrhœa. Now, to obtain that size required an incision only one-thirtieth of an inch in each direction at the internal os and one-twentieth of an inch at the external os, to convert the ora of the virgin into the ora of the parous woman. Practically, it was believed to be well in some cases to make the incision deeper, but if there was no congestion, the depth of the incision noted was regarded as sufficient. Now, to secure the required calibre of the cervical canal and internal os, Dr. Peaslee, in cases where the stenosis was slight and the cervical canal soft and pliable, had been in the habit of employing a series of steel conical dilators. But about ten years ago he had devised a measure which was more prompt and less painful than dilatation, and less dangerous than either Simpson's or Sims's operation. The operation consisted in making a superficial incision; it had for its direct object the removal of the stenosis of the cervical canal, and nothing else, and the rules which governed its adoption were embraced in the following propositions.

First, with reference to the 'internal os.'

1. If a sound one-fifth of an inch in diameter passed easily, there was no stenosis, hence no incision was required. One-fifth of an inch in diameter was the size of Dr. Peaslee's largest conical dilator and his large sound.

2. If a sound one-sixth of an inch in diameter passes, there was no absolute necessity for an incision to relieve the stenosis. But there might be stenosis for the passage of fluid, though not for the passage of a sound; and under such circumstances an incision might be required.

3. If a sound one-seventh of an inch in diameter passed, and gave no evidence of stenosis, no incision was required.

4. If a sound one-eighth of an inch in diameter could not be passed, there was present either stenosis, or, what was more probable, one of the flexions. Prove, therefore, in every case, before operating for stenosis, that the obstruction at the internal os, to the free passage of the sound, one-eighth of an inch in diameter, or more, was not due to flexion.

Second, with reference to the external os.

5. If a sound one-fifth of an inch in diameter

could be passed, there was no stenosis. But if there was congestion of the lining membrane of the cervical canal, there might be stenosis, practically with reference to conception, and an operation might be required.

6. If the external os admitted a sound only one-sixth of an inch in diameter, there was probably stenosis with regard to conception, and an operation might be necessary.

7. In case the operation was performed, it was important to retain the fusiform shape of the cervical canal as far as possible.

Dr. Peaslee then showed his metrotome for the performance of the operation he described.

The incision should be carried only to such an extent as would give the precise average relations of size found in the cervical canal of the parous woman. In cases complicated by congestion, a larger opening might be required, and the limits might extend beyond one-fifth of an inch in diameter, for the internal os, and perhaps to one-third of an inch for the external os. Dr. Peaslee's operation then consisted mainly in making a superficial incision in the cervical canal, sometimes not extending through the mucous membrane, and sometimes a trifle more, as already indicated. It should be performed at least four days after or six days before the catamenial period; and, by preference, the small blade of Dr. Peaslee's instrument should be used, for the calibre of the canal could be easily increased with the dilators, and by so doing the liability of union of the wound was diminished. No anæsthetic would be required, and the amount of hæmorrhage seldom exceeded two drachms. He had never known of pelvic cellulitis or peritonitis following the operation, because the medullary portion of the cervix had not been disturbed. His observations were based upon about three hundred operations. The woman should be kept in bed for two or three days, and not permitted to walk for a week.

Sometimes it might be necessary to repeat the operation; but, in all the cases where he had been obliged to repeat it, Simpson's or Sims's operation had previously been performed, and the incision had closed. In such cases, the cicatricial tissue was so firm, that repetition of the incision usually became necessary. Nor had the operation been followed by sterility or miscarriages, as had the other operations, and it had very often cured the sterility, and the dysmenorrhœa of stenosis. It was, therefore, an operation that proposed all the advantages of the others, and without their dangers. In conclusion, Dr. Peaslee suggested that both Simpson's and Sims's operation should be rejected for the treatment of sterility and dysmenorrhœa, and that some better method should be employed, of which, perhaps, his own was merely a forerunner.

In the discussion which followed the reading of Dr. Peaslee's paper, Dr. Fordyce Barker remarked that he believed it to be high time that the subject under consideration was discussed, and that the opinions and practices of the leading gynecologists of the city should be known and understood. He argued that it would doubtless relieve the profession from some reproach, and vindicate it from a dangerous under-current of belief, that the leading practitioners of the city of New York regarded slitting open the cervix uteri as the grand panacea for all uterine disease, not only for the cure of local troubles, but formed a therapeutical measure for the cure of hysterics, nymphomania, and all allied maladies.

In certain cases, doubtless the operation was required, but as a general thing it was not necessary. About twenty years ago Simpson presented a hysterotomy to Dr. Barker, and the first two operations he performed were followed by conception, and the children were carried to term. The next twelve cases were cured of the dysmenorrhœa, but the sterility remained. Since that time the doctor had closely watched professional opinion with reference to the operation, and had also seen patients in an extremely dangerous condition from loss of blood following the operation; and his experience enabled him to verify the correctness of some of the statements made by Dr. Peaslee with reference to the unnecessary performance of the operation.

The operation should never be performed except for stenosis, either congenital or acquired. Acquired stenosis might come from displacement; but there were many cases of displacement which were not attended by either sterility or dysmenorrhœa. Many such patients, however, had been treated for displacement, when no treatment whatever had been necessary. The doctor then related a case, and the woman had had three or four miscarriages since the performance of the operation. Dr. Barker remarked, in conclusion, that he had not performed the operation in a single instance in all his hospital practice, but that he had occasionally performed it in private practice.

Dr. Emmet coincided with the general doctrine advanced in the paper, and also in the remarks made by Dr. Barker, adhering, however, to the view that the operation of discission was proper in cases of flexure and curvature of the cervix.

Dr. Pallen was inclined to the opinion that the operation was justifiable, and much more frequently called for than one might be led to infer from the paper by Dr. Peaslee.

ANATOMY AND PHYSIOLOGY.

LÉPINE ON THE INFLUENCE OF THE EXCITATION OF THE BRAIN ON THE BEATS OF THE HEART.—Lépine (*Gazette des Hôpitaux*, no. 90, 1875) found that stimulation of the surface of the most anterior part of the cerebrum influenced the heart-beats of the dog. If the *left* vagus were divided in a curarised dog, and the *right* surface of the brain were stimulated, the number of heart-beats was unchanged; if the *left* side, on the contrary were stimulated, the number of heart-beats was diminished and the height of the pulse sank.

ROCHEFONTAINE ON THE PHENOMENA PRODUCED BY FARADISATION OF THE CORTEX OF THE BRAIN.—Rochefontaine (*Gazette Médicale de Paris*, no. 52, 1875) found when both vagi were left intact, and the superior cervical ganglia of the sympathetic of the dog were removed, that by faradisation of the superior frontal convolution before and behind the sulcus cruciatus, there was an increase of the blood-pressure and the heart-beats. If, however, the superior cervical ganglia were left intact, and the vagi divided between the base of the skull and the nerve-fibres passing from the superior cervical ganglia to them, then, on stimulating the same points on the surface of the brain, there was a very considerable diminution of the blood-pressure and of the heart-beats. Stimulation of several parts of the

surface of the brain had, therefore, the same effect as stimulation of the depressor nerve. In a similar manner, from four different parts of the surface of the brain, contraction of the spleen was produced; from other points contraction of the intestines. The author concludes from this and from the analogy of the phenomena obtained on stimulation of peripheral sensory nerves, that an unlimited number of sensory points exist on the surface of the brain, whose stimulation acts on the terminations of cerebral centripetal fibres. These conduct the impression to the nuclei of grey matter in the intracranial portion of the cord, whence it is transferred to centrifugal nerves to produce these various phenomena.

As supporting his view the author cites the experiments of Brown-Séquard, who, by the application of the actual cautery to the centres placed in the cortex, did not succeed in causing movements of the extremities.

FISCHER ON THE THERAPEUTIC GALVANISATION OF THE SYMPATHETIC.—G. Fischer (*Deutsch. Arch. für Klin. Med.* Band xvii. p. 1, and *Centralblatt für die Medicinischen Wissenschaften*, no. 25, 1876), has made experiments on horses and cats. The first point investigated was, in what manner the blood-pressure in the arteries supplied by the sympathetic and lying outside the cranium was influenced by electrical stimulation of the cervical sympathetic. The manometer was placed in the internal maxillary artery.

By faradisation of the cervical sympathetic of the horse, the blood-pressure was increased and pronounced tension of the arterial walls was produced, whilst with a constant current only negative results were obtained.

A second series of experiments was performed on cats. In this animal the cervical sympathetic lies in a sheath of connective tissue, along with the vagus and the carotid, and can be easily isolated, without hæmorrhage. With regard to the effect on the contraction of the iris, the result was the following. On passing the faradic stream through the skin, an obvious, but very feeble effect was produced; stimulation of the isolated nerve gave a pronounced reaction. By galvanic stimulation, only closure was observed, sometimes no effect at all; the complete law of contraction could in one experiment only be observed, when the vagus was stimulated simultaneously with the sympathetic.

As to the effect of galvanisation of the sympathetic on the circulation in the brain and its membranes, the author found in eight faradisation experiments on cats, that the brain-pressure was in five cases increased during the passage of the current, in three cases diminished; but all variations, positive as well as negative, were extremely unimportant. By galvanisation in eleven experiments, there was in four only a minimum increase, in three no change; there never was a reaction from the closing or opening shock in the whole series. Galvanisation never had an effect on the frequency of the pulse; faradisation of the vagus increased the blood-pressure; it was slowly increased also by galvanisation, when the current was passing; and by simultaneous faradisation of the vagus and sympathetic in five experiments, the brain-pressure was increased in four, and in two considerably so. By stimulation of the sympathetic on each side, the pressure rose rapidly and considerably, to sink again when the current was passing; and every time, even with the most profound narco-

sis, clonic spasms appeared in the extensors of the hind foot and of the back.

EULENBURG AND LANDOIS ON THERMAL INFLUENCES PROCEEDING FROM THE HEMI-SPHERES OF THE CEREBRUM.—Drs. Eulenburg and Landois (*Centralblatt für die Medicinischen Wissenschaften*, no. 15, 1876), operated on dogs, and they found that young animals were specially well suited for their purpose. The estimation of the temperature was taken thermo-electrically by means of a Meissner-Meyerstein's electro-galvanometer. As thermo-electrical elements, two varnished Dutochet needles were employed. After opening the skull and exposing the surface of the brain, the grey matter was destroyed by means of redhot copper wires to the depth of one to one-and-a-half millimètres. The animals were kept deeply under chloroform. When a certain portion of the brain was to be stimulated the animal was curarised, and induction shocks were applied by means of two fine platinum wires which served as electrodes. The chief results were the following.

1. Destruction of certain regions of the anterior lobes of the brain corresponding to the temporal region caused at once a considerable increase of the temperature in both contra-lateral extremities. The increase of temperature occurred immediately after the complete destruction of the corresponding parts of the surface of the brain, often before the animal awoke from the chloroform, and before it made any spontaneous movement. The increase immediately after the operation may be 5° to 7° Cent., in other cases only $1\frac{1}{2}^{\circ}$ to 2° Cent.

2. The thermal areas for the anterior and posterior extremities are separated from each other. The area for the fore foot lies somewhat more anteriorly, and somewhat external close to the lateral end of the sulcus cruciatus. Destruction of the supra-Sylvian gyrus has no thermal effects.

3. In successful cases, after the animal awakened from the chloroform, there generally was disturbance of motion, and it seems that the portions of the surface of the brain which have this thermal action must lie in the neighbourhood of the corresponding motor areas.

4. The increase of the temperature is in nearly all cases clearly pronounced for a long time after the injury, sometimes even for three weeks; generally, however, it returns to the normal on the second or third day. Localised electrical stimulation of the above areas with sufficiently weak currents is accompanied by a small and temporary diminution of temperature (0.2° to 0.6° Cent.) in the contra-lateral extremities.

The author is of opinion that these facts justify the conclusion that there is a vaso-motor apparatus in the grey matter of the brain, and that it partly represents the central terminations of the vaso-motor nerves which run in the cerebral peduncle.

CARVILLE AND DURET ON THE FUNCTIONS OF THE CEREBRAL HEMISPHERES.—C. Carville and H. Duret write on this subject in the *Archives de Physiologie*, 1875, and there is an abstract in the *Centralblatt für die Medicinischen Wissenschaften*, no. 52. The first part of this very extended research contains an historical review and criticism of the experiments hitherto made on the function of individual parts of the brain. The authors reject entirely, and with justice too, the results of the experi-

ments of Fournié, obtained by injecting chloride of zinc into the brain of the living animal. Even the results of Nothnagel's experiments they discard (injection of dilute chromic acid). The second part of the paper is devoted to an experimental criticism of the results of Hitzig and Ferrier. The idea of Schiff that the movements caused by stimulation of the surface of the brain are reflex, the authors regard as not supported by fact. They cite experiments performed on living and dead brains, to show that on a certain point of the surface of the brain localised currents extend both laterally and in depth. Two platinum needles connected with a very sensitive galvanometer were placed on the surface of the brain, or pushed into it to the depth of several millimètres. On applying weak induction-currents to certain parts of the surface of the brain, the galvanometer needle was more or less deflected. Nevertheless, the localised action of the current is to be assumed, in as far as stimulation of parts of the surface of the brain produces different and quite distinct movements when only weak currents are employed, a fact already sufficiently pointed out by Hitzig. With regard to action of anæsthetics the authors agree on the whole with Hitzig. A further series of experiments is given to show that the integrity of the grey matter is not necessary for the occurrence of circumscribed movements. Similar experiments were performed by Braun and Putnam. The experiments are new which prove that complete extirpation of the corpus striatum does not hinder the occurrence of movements on stimulation of the surface of the brain, and that distinct bundles of the centrum Vieussensii conduct the excitement from the brain to the periphery. Further, some results of Ferrier are corrected, which were obtained by employing too strong a current. The extirpation experiments do not show anything new. The authors come to the conclusion that the cerebral centres are replaced after their destruction in the grey matter of the same hemisphere.

Further experiments are connected with elucidation of the functions of the corpus striatum and optic thalamus. Concerning the latter, the authors confirm the experiments of Ferrier, according to whom electrical stimulation of these structures does not cause either pain or movement. In studying the function of the corpus striatum, one must specially bear in mind the nucleus caudatus and the corpus lenticulare. Electrical stimulation of the nucleus caudatus yielded the author the same results as Ferrier, viz., contraction of all the muscles on the opposite half of the body. Complete extirpation caused a great weakening of the opposite half of the body, (frequently falling to one side) and a movement in a circle, in which the animal always executed the same movements with the sound feet, and rotated around the affected ones like a top. On injuring the internal capsule, complete paralysis of both extremities of the other side is produced. This occurs upon injuring the anterior portion of the first two-thirds, which lies immediately under the ventricular surface of the nucleus caudatus. Section above the same produces only incomplete hemiplegia. Destruction of the posterior part of the capsula interna (between the thalamus opticus and nucleus lenticularis) produces hemi-anæsthesia of the opposite half of the body.

The authors, from their experiments, attempt to locate the probable position of the different centres in the cortex of the brain in man thus. The centres for the different movements of the upper and lower extremities lie in the middle of both upper posterior

cerebral convolutions, in the middle of the anterior cerebral convolutions, and in the whole of the upper temporal lobes.

The centre for the movements of the neck and head lies in the posterior part of the first frontal convolution, where it unites with the anterior central one.

The most probable centre for the muscles of expression and eyelid lie at the place of junction of the second frontal convolution with the anterior cerebral one.

The centres for the movements of the tongue, jaw, and lips are placed in the third frontal convolution (Broca.)

Single centres for the movements of the eye-balls, are placed, according to Ferrier, in the gyrus angularis. The first temporo-sphenoidal convolution has probably a relation to the organ of hearing.

Lastly, the authors give a series of experiments which have a pathological importance. Coma occurs most easily in extensive hæmorrhage into the centrum semi-ovale; perhaps with hæmorrhage on the convexity, and specially of the frontal lobes. If an intraventricular hæmorrhage stimulate the ependyma of the ventricle, tetanic convulsions of the extremities of the opposite sides of the body result. With hæmorrhage at the base stretching towards the medulla, the phenomena of general tetanus are always to be observed at the moment of the attack.

WM. STIRLING, D.Sc., M.D.

FÉRÉ ON SOME POINTS OF THE TOPOGRAPHY OF THE BRAIN.—M. Ch. Féré (*Archives der Physiologie*, Mai-Juin, 1876) says that the brain is so altered by flattening after removal that all measurements must be made *in situ*, and best on frozen heads. According to him, the brains of females usually measure 16 centimètres in their largest antero-posterior diameter, and the largest transverse diameter is 127 millimètres. The brains of males are a little larger each way. The superior extremity of the fissure of Rolando is usually about 111 millimètres posterior to the anterior extremity of the brain, and 49 millimètres from the posterior extremity. The anterior extremity of the same fissure is about 71 millimètres from the anterior extremity of the brain, and 89 millimètres from the posterior extremity. The extremities here mentioned are the most projecting points of the hemispheres, not the ends of the lobes. He proceeds to notice certain variations which may occur in the fissures and convolutions, and also describes the appearances of the central ganglia as seen in horizontal, transverse vertical, and longitudinal vertical sections. He next describes the relations of the parts of the brain to the external surface of the skull. After referring to the labours of Gratiolet, Broca, Heffler, and Turner, he gives the result of his own observations, which were made after the method devised by Broca, by boring holes with a gimlet, and putting in splinters to mark the places.

1. The parieto-occipital fissure corresponds with the summit of the angle of the occipital bone. The extremity of the occipital lobe which rests on the tentorium corresponds with the external occipital protuberance, so that it is easy to determine the position of the cuneus.

2. Immediately in front of the lambdoidal suture the quadrilateral lobe lies in the great longitudinal fissure, and the parietal lobule in the convexity of the hemisphere.

3. The fissure of Rolando is far from being, as Gratiolet thought, subjacent to the coronal suture. Its posterior extremity is 45 millimètres behind the vertex in the female, and about 47 or 48 millimètres in males. At its anterior extremity the fissure approaches the coronal suture, but stops 1 centimètre above it. The external extremity of the suture corresponds with the interval between the two folds of the third frontal convolution. The anterior extremity of the fissure of Rolando is 25 to 30 millimètres posterior. Thus it may be deduced that the posterior parts of the frontal convolutions, the ascending frontal, and all between the fissure of Rolando and the parieto-occipital fissure lie below the parietal bone. The position of this fissure is of especial interest, as it is in the convolutions which bound it that physiological experiments and anatomico-pathological observations have localised most of the psycho-motor centres. Nearly all the region covered by the parietal bone, is supplied by the middle cerebral artery.

4. The sphenoidal excavation which lodges the anterior extremity of the temporo-sphenoidal lobe may be prolonged so as to lie between the orbit and the temporal bone, so that a wound made by a sharp instrument might injure this part of the brain before entering the orbit; and this peculiarity may exist on only one side.

Certain pathological conditions may alter the relations of the fissure of Rolando; these may be divided into two groups:—

A. Changes due to alterations in the relative sizes of different parts of the brain.

1. In some cases of congenital arrest of development of the anterior lobes, as in idiocy, the anterior extremity of the fissure may be nearer the anterior extremity of the brain.

2. In cases of atrophy from disease, as after amputation of a limb in childhood, as in a case of M. Charcot's, where the posterior extremity of the fissure was advanced 5 millimètres.

3. In cases of old destructive lesions of the convexity.

B. Changes of relation due to particular dispositions of the cranium.

1. By artificial deformities, such as that produced by a bandage which elongates the head posteriorly, the posterior extremity of the fissure may be thrown forwards 10 to 15 millimètres.

2. When the meso-frontal suture continues permeable to an advanced age, the frontal lobe may develop anteriorly instead of posteriorly; the two fissures may approach the vertex.

He passes finally to consider how these relations may be recognised on a head covered by the integuments. The external extremity of the coronal suture is situated about 1 or 2 millimètres above or below a plane passing through the superciliary ridge and 15 to 20 millimètres behind the external angular process of the frontal bone. A vertical section made here would pass through the third frontal convolution and amputate the anterior extremity of the nucleus caudatus. The anterior extremity of the fissure of Rolando is 25 to 30 millimètres posterior, and a little above this point. In order to determine the position of the posterior extremity situated 45 millimètres (in the female and a little more in the male) behind the vertex, it is only necessary to recognise the vertex. To find this, the cranium must be placed resting on the superior alveolar process and the condyles; the vertex will then be in the

line drawn perpendicular to this plane through the external auditory meatus; it is easy to put the head in this position, and otherwise the point of intersection of the sutures may often be felt. This auriculo-bregmatic plane (Busk) is about 30 millimètres behind the external extremity of the coronal suture, and in consequence in the neighbourhood of the anterior extremity of the fissure of Rolando. A vertico-transverse plane parallel to this auriculo-bregmatic plane drawn through the posterior extremity of the fissure of Rolando gives approximately the posterior limit of the optic thalamus. This last plane passes always or nearly close to the point of union between the parietal, temporal, and occipital bones, and consequently behind the mastoid process. The same plane gives the posterior limit of the island of Reil, and a little behind is the posterior extremity of the fissure of Sylvius and the angular gyrus. A horizontal plane passing about 45 millimètres below the convexity of the head will give the superior limit of the central ganglia. The position of the parieto-occipital fissure corresponding to the lambdoidal suture is usually easily made out by palpation, but otherwise corresponds to a plane passing through the minimum transverse frontal diameter. By the aid of these data it is possible in cases of wounds of the head to determine at least approximately what portion of the brain is injured, and in cases where necropsies cannot be procured, this proceeding may aid in the solution of the problems of functional localisation. In conclusion, he relates the case of a man who suffered from convulsions of the left orbicularis and zygomatici, after a wound caused by a fall on his head when drunk. The cicatrix was visible, and there remained an irregularly four-sided depression of the parietal bone, 15 millimètres square and 2 to 3 millimètres in depth. It was situated upon a horizontal line, passing from the summit of the occipital bone to the transverse minimum frontal diameter, and about 1 centimètre behind a vertical line, passing through the posterior limit of the mastoid process. On comparing the head of the patient with crania, on which were drawn the convolutions, whose relations had been determined by the preceding method, it was found that the lesion corresponded to the posterior part of the gyrus angularis. It is most interesting to notice that it is precisely in this region that Ferrier has localised the motor centres for the muscles of the eye and the eyelids.

ROBERT SAUNDBY, M.B.

RECENT PAPERS.

Note on the Changes in the Liver, following on the Ligature of the Ductus Choledochus. By MM. Charcot and Gombault. (*Archives de Physiologie Normale et Pathologique*, May and June, 1876.)

PATHOLOGY.

MEYER ON ANEURISMAL CHANGES OF THE INTERNAL CAROTID IN THE INSANE.—L. Meyer (*Archiv für Psychologie* Band vi. p. 84) regards disturbance of the circulation in the brain as an important factor in the production of psychical disturbances. Whilst up to this time the intracranial vascular area has been specially studied, he directed his attention to the internal carotid, proceeding from the view that long-continued and intense disturbance of its peripheral circulatory channels—

the convolutions of the cerebrum—must react on the condition of the trunk of the vessel itself. In all cases which the author investigated, he found the changes above referred to. In the thirty-one observations given, disease of a local sharply defined area of the internal carotid was observed. The disease extended from the origin of the vessel, almost always surrounding it in a circular form, extending for eight millimètres to almost one centimètre upwards, and ending there suddenly and sharply defined. Upwards these limits were never surpassed, but sometimes the lesion extended lower, passing even into the common carotid. The changes consisted in arterio-sclerosis, generally in its later degenerative stages, mostly in the form of circular calcification. Further, and chiefly at the lower margin of the altered area, there was a change in the arterial wall, which on microscopic section was seen to be due to simple thinning of the tunica media, whilst the intima remained intact. Thus partial dilatations of the vessel were formed. Frequently, however, the whole diseased part was dilated, and in eight cases distinct aneurisms were found, which considerably exceeded in size the circumference of the common carotid.

WM. STIRLING, D.Sc., M.D.

TUCK AND JACKSON ON A RARE FORM OF MONSTROSITY.—In the *Boston Medical and Surgical Journal* for April 20, Dr. Tuck, Visiting Physician of the Boston Lying-in Hospital, and Dr. J. B. S. Jackson, Professor of Pathological Anatomy in Harvard University, describe a remarkable case of monstrosity. A woman, aged thirty-two, about eight months pregnant, was delivered in the Boston Lying-in Hospital of twins; the first was dead, and was well formed; the second, which was removed with some difficulty, is the subject of the following description.

The fœtus consisted of a trunk and two lower extremities. The first terminated superiorly in a large rounded fleshy mass, as is usual in this form of monstrosity. The extremities were well developed excepting the toes, of which there were four only on each foot, and upon one of them the two smallest were fused. The whole length of the fœtus was 10½ inches. Upon the anterior face, and 4½ inches from the rounded upper extremity, was a flaccid mass about the size of a pigeon's egg, covered with integument, which must have represented the head. Upon each side of this mass, and 3¼ inches apart, was a small but well-marked dimple-like depression in the skin, which probably showed where the upper extremities would have been if they had existed. About an inch below the fleshy mass above described was the umbilical cord, and by the side of it a protrusion of three or four inches of intestine, which had been covered by a thin membrane that had burst. An inch or two below the umbilicus was a tolerably developed scrotum, but there was neither penis nor anus. The great mass of the trunk, the greatest circumference of which was fifteen inches external to the skeleton, consisted, as is usual in the acephalous fœtus, of a coarse fibro-cellular tissue, very tough and very cedematous, but there were besides in the posterior and upper portion a considerable number of cysts lined by a delicate serous-looking membrane, several of which would have held two or three ounces of fluid.

Of the internal organs, the heart, lungs, stomach, liver, spleen, and testicles were wanting, as was also

the diaphragm. In the thorax was a large quantity of coarse, white, and very tough fibro-cellular tissue, with less of the same in the abdomen. The aorta, which was of sufficient size, and in its usual relations to the spine, terminated not far below the upper extremity of this last in several small branches, and inferiorly gave off a large hypogastric artery upon the left side, but the right was wanting. There was a small intestine, $19\frac{1}{4}$ inches in length, and terminating superiorly in a *cul-de-sac*; also a large intestine, that seemed to open freely into the fundus of the urinary bladder. The cæcum was about one half of an inch in length, and sufficiently developed, but blunt, as in one of the lower animals, and entirely wanting the tapering appendage that is to form the appendix cæci. Most conspicuous in the abdomen were a large kidney and a suprarenal capsule. The first was situated mainly upon the right side, and the last wholly upon the left.

From the kidney, and at some distance apart, arose two ureters, one of which was more than two lines in diameter, and ended near the bladder in a *cul-de-sac*; the other, which was large throughout, dilated at one part and rather suddenly to the size of the end of the forefinger, and finally opened into the bladder not far from the point of entrance of the intestine. The bladder was of an oval form, about the size of a large nutmeg. Its contents, if there were any, were not ascertained, and it was an interesting negative fact that it was neither distended nor thickened, as it has been found to be in some other cases, in which there was no external outlet. When the intestine was cut across and inflated, the air passed freely into the bladder, ureters, and pelvis of the kidney. The question that arose as to this last organ, whether it was to be regarded as a single one or the fusion of two, seems to be an open one.

The skeleton consisted mainly of a spine, thorax, and lower extremities. The first was well developed so far as it extended. Of the cervical vertebrae, however, there were three or four partially fused or irregularly developed, and the lowest one only was normal. Inferiorly the spine terminated in a most remarkable manner, in the sacral region. This lower portion ended quite bluntly, and the opening of the vertebral canal was fully one-fourth of an inch in diameter. The pelvis was well developed, as were the lower extremities, but the ischia were somewhat approximated and connected by a marked fibrous band.

Of the ribs there were thirteen on each side, well developed; but upon the right side, from the second to the fifth inclusive, they were partially fused.

The sternum was formed in two lateral halves and widely separated, but connected upon each side, as is usual, with the cartilages of the ribs. Over the upper left rib was a flattened bone of a somewhat triangular form, one-fourth of an inch or more in diameter, which undoubtedly represented the scapula. Also near the upper extremity of the spinal column, and somewhat anterior to it, was a small curved bone somewhat suggesting the body of the hyoid, or perhaps the lower jaw, its length being six lines or more, and its diameter about two lines.

PROFESSOR HUXLEY.—Professor Huxley has started on a tour through the United States. It is understood that the tour is not a lecturing one, and that the Professor has only consented to deliver three or four lectures.

MEDICINE.

BACCELLI AND VALENTINER ON THE DIFFERENTIAL DIAGNOSIS BY PHYSICAL SIGNS OF DIFFERENT KINDS OF PLEURAL EFFUSION.—No. 21 of the *Berliner Klinische Wochenschrift* for 1876 (May 22) contains a brief communication from Dr. Valentiner of Ober-Salzbrunn, now at Rome, containing the results of many years' clinical studies by Professor Baccelli, in the Hospital Santo Spirito at Rome,* on the transmission of sounds through varying kinds of fluid in the pleural cavity. Hitherto we have been taught that it is possible by means of physical examination, to diagnose the presence of fluid in the pleural cavities, but that no auscultatory differences resulted from different kinds of fluid; in other words that dropsical, sero-fibrinous, and purulent fluids were all alike in the transmission of sounds to the ear of the listener.

Baccelli's work goes to prove the very opposite; namely, that the variety in the auscultatory phenomena will enable us to form an opinion as to the nature and constitution of the fluid in the pleural cavity. In order to form such a precise diagnosis, all disturbing sounds must be as far as possible excluded. The person whose chest is being auscultated should turn his face whilst speaking in a direction which is, as nearly as possible, opposite to a diagonal drawn through the very middle of the effused fluid. The ear which auscultates should be pressed close against the chest which is examined, and the free ear should be closed with the index-finger of the corresponding hand. By auscultating in this method, Baccelli has found that the thinner and more homogenous the fluid in the pleural cavity is, so much the more easily, perfectly, and to greater distances will it transmit the vibrations of the voice, and even whispers. The principal conduction of sound is at the lower part (basis) of the collected fluid; whispered words are, however, most clearly accentuated, along with bronchial expiration, when the fluid is nearly homogeneous (serous effusions). The upper part of the effusion conducts sound worst, for there neither bronchial breathing nor loud talking can always be heard. In proportion to the thickness of the fluid, the conduction of sound is hindered. Hence effusions with fibrinous flakes, or with blood and pus-corpuscles, conduct sounds badly. A true empyema is the worst conductor of sound of all the effusions. Fluids with granular corpuscles, fat, and fat-crystals, and other not morphological or fibrinous elements, behave, as regards auscultation, very much like hydropic effusions. The physical explanation appears to be as follows. Unlike gases, fluids conduct tones with intensity proportioned to their lightness and homogeneity; whilst the waves of sound are conducted somewhat more quickly, but with diminished intensity, through thicker and heterogeneous fluids, which are mingled with elastic, solid bodies. In the case of mixed coagula and corpuscular elements, as well as in the case of exudations enclosed in thick, villous membranes, there is, in consequence of this mixture and variety of conducting media, more and more reflection [?] refraction] of the sound-waves, instead of

* Sulla trasmissione dei suoni attraverso i liquidi endopleurici di differente natura. Lezione clinica di Guido Baccelli. *Archivio di medicina, chirurgia, ed igiene*, 1875, fasc. VII e VIII.

their being conducted in almost straight lines, as in the case of homogeneous endopleural fluids, which are strong conductors. At the point where the lung is most compressed, towards the base of the exudation, the sound-waves are probably reflected but little, and thus little decomposed. In other words, they are not much affected by interference at this spot. It is, perhaps, on similar acoustic principles that a pericardium so distended with fluid as to be absolutely dull on percussion, often conducts bronchial râles from adjacent portions of lung with remarkable clearness [Skona's consonance, or phenomena of resonance of Baccelli].

The importance of deciding on the nature of the contents is obvious, in relation to paracentesis thoracis.

Nine clinical cases illustrative of these views are appended to the Italian original, which the German translator omits, because, as he justly remarks, all large hospitals have ample materials of their own for proving the correctness of this theory.

HOISEL ON A SUCCESSFUL CASE OF PARACENTESIS THORACIS.—The Vienna *Medicinisch-Chirurgisches Central-Blatt* of June 2, 1876 [no. 22, XI. Jahrgang] reports the following case at some length. The wife of a landed proprietor of Opoka, in Styria, aged thirty-nine, was attacked with left-sided pleurisy in the ninth month of pregnancy. Four days afterwards she was, a little prematurely, confined of a healthy child; but, in spite of these unfavourable circumstances, the puerperal condition was not much affected. Her dyspnoea, however, increased, in spite of remedies, and four weeks after the beginning of her illness, the heart was pushed far over to the right, and the physical signs showed that the left pleura was nearly full of fluid. Her dyspnoea was extreme. After five or six days' trial of another diuretic (the iodide of potassium) it was resolved to tap the chest. This was done in the fifth intercostal space, in a line with the left axilla. An elastic tube was attached to the trocar, and the end placed in a glass of water, standing in a larger vessel. After three quarters of an hour three litres (= $5\frac{1}{4}$ pints) of greenish-yellow sticky fluid, which coagulated on exposure to air, were withdrawn. A considerable quantity was, however, left behind, for fear of syncope. In three days all this had disappeared, if physical signs be reliable. In a few days more she was out of bed and doing domestic duties. Six weeks afterwards, her health was pronounced excellent.

W. BATHURST WOODMAN.

BOWDITCH ON EMPYEMA AND THORACENTESIS. In the *Cincinnati Lancet and Observer* for June, Dr. Bowditch, of Boston, states that he has up to this time performed thoracentesis 328 times, on 207 patients, and that none of his patients have died immediately, or in consequence of the operation. He explains the large number of deaths after the operation, in Europe, by the desire of the operators to do too much, and thus prolong the operation beyond the time proper for the patient. They desire to get out all the fluid that can be drawn. His own rule is to stop suction the moment the patient begins to suffer from any uncomfortable symptoms—stricture of the chest, severe harassing cough, etc. A mild cough is a favourable sign, as it indicates expansion of the lungs. This rule applies to all cases, whether serum, pus, bloody or foetid fluid be found

in the pleural cavity. Dr. Bowditch asserts that nearly all children with empyema recover after thoracentesis. Adults with recent trouble are in a more favourable condition for recovery than when the disease is chronic. Sometimes after repeated operations phthisis is liable to set in. In such a case the repeating of the aspiration is a bad mode of proceeding. It is better, if after aspirating once, or at most twice, a constant tendency to the re-accumulation of pus is found, to make a free and permanent opening. This may be made by means of a trocar and cannula just large enough to admit the passage of a drainage-tube. Shorter cannulas must be substituted for the one originally used, according as the cavity diminishes in size. A free incision is more painful, but is the better operation of the two. With regard to the subsequent treatment, as long as laudable pus is being thrown out, and the lung is expanding, and the patient is improving, Dr. Bowditch does nothing. He thinks that patients are often made worse by too much 'washing out the cavity.' If, however, the patient fails, has hectic, etc., he uses injections of warm water, which often produce the happiest results. He has not used carbolic acid, but thinks that it may be useful. Constant drainage is his rule. Where the fluid drawn is serous he prefers repeated aspiration to a permanent opening. If the serum be bloody at the first operation he never makes a permanent opening, for the case is then one of malignant disease. Empyema may occur in persons previously healthy; but a bad constitution is often at the bottom of the matter. As sequelæ, Dr. Bowditch has never met with Bright's disease or enlarged liver, but has met with tuberculosis and enlargement of the heart in a few cases. In these last cases, though the fluid did not reaccumulate, the lung never regained its free expansion, and after months of trouble the patients died suddenly with cardiac symptoms.

PEITAVY ON RESECTION OF THE RIB IN EMPYEMA.—In the *Berliner Klin. Woch.* May 8, 1876, Dr. Peitavy records two cases of empyema, treated by resection of a portion of the rib, for the purpose of permanently widening the aperture, and so facilitating both the discharge of pus, and the injection of fluids. In the first case, aged sixty-four, pus was removed by incision six weeks after the first symptoms. In spite of washing out the chest by the double catheter, injection of tincture of iodine, and the use of a drainage-tube, pus was retained and the patient suffered from fever with evening exacerbations, rigors, loss of appetite, and increasing weakness. Attempts to dilate the aperture with laminaria caused great pain, and it became impossible to wash out the chest properly. Finally, five months after the incision, a portion of the seventh rib, somewhat more than an inch in length, was removed with the chain-saw. Pus escaped, a drainage-tube was inserted, and the symptoms were relieved from that time. The tube was removed after a month, and in another fortnight the wound had closed. In the second case, aged fifty-six, the result was less striking. Two weeks after the first incision, and only seven weeks after the first symptoms, a portion of the eighth rib was excised and a tube inserted. Fever however continued, and as injections caused coughing and dyspnoea, the tube was removed after twelve days. The case was complicated by a bronchial fistula, but was completely cured about two months after the resection. A third case of empyema is recorded from the

practice of Professor Simon, in which resection of the rib acted not so much by allowing the free discharge of pus, as by permitting the approximation of the ribs and the obliteration of the cavity. Peitavy prefers resection to Fräntzel's practice of fixing in a silver cannula, because it is less painful, less irritating to the pleura, and tends to diminish the size of the cavity.

F. TAYLOR, M.D.

STITZER AND ROCHS ON A RARE CASE OF CHRONIC GENERAL PERITONITIS, WITH PROTRUSION OF THE NAVEL.—Staff-Surgeon Stitzer, M.D., and Assistant-Surgeon Dr. Rochs, of Mainz, report the following case in the *Berliner Klinische Wochenschrift* of May 22 and 29 last [nos. 21 and 22 for 1876].

The patient, Louisa K——, daughter of a refreshment-room proprietor, was the child of healthy parents, whose family history was extremely good, and herself enjoyed good health, until her eighth year. None of the family were scrofulous. Louisa was a very lively child. In her eighth year (1868) she had measles. It was not, however, until some months afterwards that her parents remarked that her abdomen began to enlarge. Her general health was still little affected. In the spring of 1871, however, the increase of the fluid, the dyspnœa, etc., induced them to consent to her being tapped. Ten *schoppen* [a little over a gallon] of yellowish-green and sticky fluid were removed. There was no particular œdema of the lower extremities. A few days afterwards she was quite lively. For nearly a whole year she continued apparently quite well. A photograph of the child at twelve represents her as blooming and well-formed. But towards the end of the year the abdomen began again to enlarge a little, and in the spring of 1872 she was as large again as ever. She was tapped again, and this time one and a half gallons (fifteen *schoppen*) were removed. Though not quite so well as after the first tapping, she never kept her bed, except for a day or two. Appetite was good, and she was lively, though she had lost her fresh colour. Again the belly enlarged, and a third tapping in 1873, in the summer time, removed thirty *schoppen* (more than three gallons) of fluid like that of the former ones. About four months after this the navel began to protrude, at first like a small bean, but after about fourteen days, it was an elastic fluctuating swelling, about the size of a hen's egg. It remained so for some time, and then, as the abdomen enlarged, it protruded still more. In the spring of 1874, the fourth operation for the removal of the fluid consisted in opening the swelling at the navel with a lancet. More than four gallons of fluid escaped this time. The navel collapsed completely, but the child was faint and weak, and confined to bed for a considerable time. The treatment was, perhaps, not the best possible. After this she was never so well again as after the former tapplings, being weak and soon tired. Steel drops did not do much good. The lower extremities now began to swell, she began to lose flesh, the skin became slightly jaundiced, her appetite failed, and digestion was impaired. A new feature appeared in the shape of pains about the navel, stomach, and liver—most severe about the navel. The abdomen again enlarged, and the navel again protruded. She was now about fifteen years of age. About this time (November 18, 1875) Drs. Stitzer and Rochs first saw her. She was then unable to lie down or move about. She sat on a sort of chair with arm-rests,

the lower extremities widely abducted and almost deprived of motion, resting on two foot-stools. She was much emaciated. The face had a gray icteric tint; the lips, etc., were cyanotic. There was much dyspnœa and great pain, increased by pressure, in the region of the navel. The circumference of the belly at this point was rather more than six and-a-half feet. The swelling of the navel itself was about sixteen inches long, and resembled a long sausage, with an average circumference of about ten inches. The superficial veins were much distended. The umbilical swelling showed a very dark colour of the skin, in the centre almost like a negro's. There was uniform dulness on percussion all over the front of the abdomen, and over the umbilical tumour. The heart-sounds were clear, and free from bruit. There was no albumen in the urine, which contained a good deal of bile-pigment, and lithates. There were no external signs of puberty. The skin was harsh and dry. There was no enlargement of glands. Under these circumstances, any diagnosis of the cause of the ascites was difficult. It was suggested that the exanthem might have been scarlatina, and not measles. A careful inquiry, however, appeared to negative this. The prognosis was of course unfavourable. Just as it was proposed to tap once more, intercurrent right-sided pneumonia set in. When this subsided, an exploratory puncture was made through the tumours at the navel, and about one and three quarter pints of fluid containing sodium chloride, bile-colouring, and albumen, but no succinic acid, no hooklets or scolices, but a number of small, strongly refractive, yellow-tinged, irregularly shaped corpuscles, was thus removed. The opening then became plugged with a coagulum. Opiates were ordered, as she could not sleep. As some slight relief had been given by the puncture, nothing more was done. The jaundice deepened, the weakness increased, and she died on December 4, 1875, apparently from exhaustion, there being no œdema of the lungs. The *post mortem* examination was made the next day. Permission was obtained only to open the abdominal cavity. *Post mortem* rigidity was absent. On opening the abdomen, very little fluid escaped, of a yellowish tinge. The whole abdominal cavity, from the diaphragm which extended as high as the fourth ribs to the true pelvis, was covered with an albuminous gelatinous mass, adhering together, of a yellow tint, though streaked with blood in places. It was easily separated from the underlying bowels, liver, pancreas, and spleen, but with more difficulty from the posterior walls of the abdomen. The whole of the intestines, including the stomach, were formed by adhesive peritonitis into a great ball ('zu einen grossen Knäuel'). The great omentum appeared wanting, being converted into the jelly-like mass previously noted. The sigmoid flexure and peritoneum near it, and the mesentery, were very striking in appearance, like red cylindrical bodies, owing to the vascular injection. The parietal peritoneum was enormously thickened. Cord-like adhesions of some thickness were met with in numerous parts, between the parietal and intestinal peritoneum. The liver, atrophic and nutmeg-like, was so universally adherent that it had to be cut out. The gall-bladder contained no gall-stones, only a little thick but still fluid bile. The bile-ducts were all pervious. There was no degeneration or disease of the mesenteric or other glands. The spleen was normal, except for a little enlargement and thickening. The pancreas, kidneys, bladder, ureters, and genital organs were

all normal. The distended navel contained a similar gelatinous mass to that in the general cavity, with which it freely communicated. The abdominal veins were somewhat dilated, otherwise normal. The same may be said of the arteries. The muscles, and subcutaneous tissues of the abdominal wall were œdematous, the œdema being of a semi-solid, glutinous kind. The result of microscopic examination of the gelatinous mass was as follows. The jelly itself, a soft, tremulous tissue, was amorphous; it contained, 1. A rather small number of grey, globular, nucleated cells, filled with granular contents, which were, on an average, three or four times as large as blood-corpuscles; 2. Smaller cells, apparently blood-corpuscles, or like them; 3. A number of very small, strongly light-refracting, yellowish, and very irregularly shaped granules, apparently the *débris* of cells. The jelly-like mass was traversed by numerous and sometimes very closely arranged connective tissue fibres. There was no other trace of organisation.

Epicrisis.—The *post mortem* examination disclosed a general chronic peritonitis, with gelatinous transformation of the previous exudation. It also showed; 1. Extraordinary thickening of the parietal peritoneum, with formation of new blood vessels; 2. Similar thickening of the visceral layer; 3. Similar transformation of the parietal layer of the navel; 4. Moderate formation of free membranes on the liver and diaphragm; 5. Cord-like adhesions between the visceral and parietal layers; 6. Matting together of almost all the abdominal organs; 7. Copious peritoneal effusion in the abdominal cavity; 8. The same in the distended navel; 9. Conversion of the great omentum into a gelatinous mass.

The dark pigmentation of the skin in this case was not due to poulticing, since no poultices were used. [See Bamberger, *Krankheiten des Chylo-poëtischen Systems*, pp. 692, 693.]

This case is analogous to the one briefly described by Förster (*Specielle Pathologische Anatomie*, p. 96.)

W. BATHURST WOODMAN.

GANGOLPHE ON MITRAL BRUIT IN JAUNDICE.—Dr. Gangolphe (*Du Bruit de Souffle mitral dans l'ictère*, Thèse de Paris, 1875) has seen nine cases in which a mitral regurgitant murmur accompanied jaundice. It was most marked in those cases in which the pulse was slow, and usually disappeared when the slow pulse disappeared. Gangolphe thinks the murmur due partly to a dilatation of the heart, but chiefly to a paralysis of the papillary muscles, caused by the circulation of the biliary principles in the blood. He refuses to allow anæmia any share in the begetting of the murmur, although in some cases, it will be noted, the murmur was prolonged into the arteries. The paralysis of the papillary muscles is caused by a fatty degeneration of the heart structure, secondary to the action of the biliary poisons.

This thesis is an interesting and valuable contribution to the literature of jaundice.

J. WICKHAM LEGG, M.D.

LEGG ON THE SLOW PULSE IN JAUNDICE.—Dr. Wickham Legg has laid before the Royal Society (*Proceedings*, April 1876) the result of his work on the slow pulse in jaundice. This he finds to be doubtless due to the action of the biliary acids; probably upon some part of the heart itself, since the frog's heart, when separated from the body, and fed with an artificial circulation, shows the slow pulse

when acted on by the bile-acids. Of the three factors in the heart's movement, the vagus, the muscular walls, and the ganglia, the vagus is first excluded, since the slow pulse still appears when the inhibitory function of the vagus is destroyed by atropine. Then, contrary to the opinion of Traube and Johannes Ranke, the bile-acids are found to have no influence upon striped muscular tissue, whether administered in large or in small doses by hypodermic injection. Further, the bile-acids were found to have no special action upon the movements of the ventricle of the heart, when this last was separated from the auricles. There remains, therefore, only the third factor, the ganglia, and it is to the action of the bile-acids upon these that the slow pulse in jaundice is attributed.

It is found, likewise, that the bile-acids have no effect on the rate of movement of the lymphatic hearts. The reflex irritability is greatly diminished by them.

GOLDSTEIN ON SYPHILITIC DISEASE OF THE LIVER.—The following case is reported by Dr. L. Goldstein in the *Berliner Klinische Wochenschrift*, May 8, 1876. The patient, forty-three years old, had been infected with syphilis about twenty years previously, and four years ago had had rheumatic pains in the shoulders, and pain in the right side. Recently he had had icterus and swelling of the feet. He was anæmic, and thin, with dirty yellowish tinge of the skin; but there was no glandular swelling, no syphilitic eruption, and no prominence or tumour of the liver; indeed, this organ was apparently smaller than normal. After a time hæmatemesis occurred, and the stools contained blood. The spleen was not enlarged. Ascites developed, and after a violent attack of hæmatemesis he died, eighteen days from the first loss of blood. In the right lobe of the liver was a wedge-shaped mass of connective tissue, measuring 3 inches long by 2 inches broad, and from 1 to 2 inches thick; scattered through this were numerous cheesy nodules of various sizes, bounded by dense fibrous bands. From the wedge-shaped mass stout bands of fibrous tissue stretched downwards between the larger branches of the portal vessels. The whole surface of the liver was deeply marked and deformed by cicatricial contractions, and the cut surface was finely nodular, with a finer or coarser network of irregular fibrous bands. Microscopically these bands were rich in nuclei, though many presented fatty degeneration of the new tissue. The cheesy nodules consisted of a finely granular detritus. The liver itself was small, with an adherent capsule; it was not lardaceous. The spleen and kidneys were congested, but otherwise normal.

F. TAYLOR, M.D.

DE BONIS ON EPILEPTIC PHENOMENA IN A CASE OF CEREBRAL TUMOUR.—In an article in the *Annali Clinici dello Spedale Incurabili di Napoli*, anno i. fasc. 2, Dr. T. De Bonis reviews the recent doctrines regarding epilepsy, and accepts vascular spasm as an explanation; in short, he recognises epilepsy as a vaso-motor necrosis of the brain. He relates the case of a man, aged sixty, who first suffered severe pains in the frontal and parietal regions, extending to the occiput; the pain was intermittent. Convulsions afterwards appeared; they were preceded by noises in the ears and vertigo, and were repeated several times in the day. When young, he had had gonorrhœa, soft ulcers, and syphilides. From the anamnesis and the symptoms

observed during the attack, the diagnosis was made of epilepsy with chronic meningitis from cerebral syphilis, probably with gummata disseminated in the anterior and middle lobes of the right hemisphere, and encephalitis affecting the origin of the seventh pair. Most of the symptoms—paleness, dilatation of the pupil, clonic convulsions, etc.—were principally manifested on the right side. At the necropsy, there were found congestion of the membranes of the brain, chronic meningitis, and seven gummatous masses in the cortical substance towards the upper part and the base of the cerebral lobes, some being of old, others of recent formation. There was no appreciable lesion of the medulla oblongata, pons Varolii, cerebral peduncles, hippocampus, etc.

Dr. De Bonis remarks that this case shows that from the cerebral mass there may arise irritations, which are directed along the converging fibres to the medulla oblongata and peduncles, determining a super-excitation of the vaso-motor centres, whence arises spastic contraction of the vessels, as shown by the pallidity of face and loss of consciousness. He thus explains the convulsions by spastic ischæmia of the nervous centres.

A. HENRY, M.D.

FLECKLES ON THE OCCURRENCE OF ALBUMINOUS URINE IN DIFFERENT CHRONIC AFFECTIONS, AND ON THE UNSUCCESSFUL RESULT OF CARLSBAD THERMAL TREATMENT IN CHRONIC DIFFUSE INFLAMMATION OF THE KIDNEYS.—Dr. Fleckles (*Deutsche Medicinische Wochenschrift*, May 13, 1876) has observed albuminuria in Carlsbad, as a symptom of various pathological processes and not as an indication of diffuse inflammation of the kidney or of Bright's disease, in catarrh of the urinary organs, in lithiasis, in atrophy of the liver, in spleen and in intermittents, as also in organic diseases of the heart and of the female sexual organs. He writes as follows.

Graves and Gubler were the first who drew attention to the connection between liver disease and albuminuria. Robin and Valentin considered albuminuria to be a blood-anomaly, in which there was supposed to be present in the blood an excess of albuminoid matter, which was regarded as the cause of the albuminuria. This is supported by what is seen in Carlsbad, where albuminuria may be observed in disturbance of the digestive organs, in chronic stomach and intestinal catarrh, and in liver and spleen affections, the result of malarious disease. In that place especially, we observe that chronic blood-diseases act on the kidneys so as to make them excrete considerable quantities of albumen. These anomalies of the constitution of the blood may also often be the cause of important disease of the kidneys, especially when albumen has long been present in the blood in quantity which it cannot assimilate. Apparently there is very much the same pathologico-chemical process as in mellituria, in which it is only when there is a great accumulation of sugar in the blood that the symptoms of diabetes appear; whereas, when but small quantities of sugar are found in the blood, none of the characteristic symptoms of that disease are apparent.

Without being humoral pathologists, we can not but admit that Jaccoud has some grounds for the following generalisation. 'The alteration of the kidneys in albuminuria is only of secondary origin. It is evident that the cause of albuminuria must be found in the whole state of the constitution, as albumen is

excreted not solely through the kidneys, but through the wide extent of the healthy mucous membranes; therefore albuminuria is not always to be regarded as a sign of this or that disease of the kidneys, but as an expression of certain general disturbances of the whole organism.'

When microscopic examination of the blood reveals no casts and no blood in the urine, and when the usual signs of Bright's disease are absent, and yet albumen is present in the urine, we are warranted in assuming that we have a chronic symptomatic albuminuria, which may be the accompaniment of many altered conditions of the blood. Obstructions of the vena portæ or of the abdominal viscera often produce hyperæmia of the kidneys, and if they last long, cause albuminuria; but albuminuria is much oftener produced, as we have occasion to observe every season, by affections of the urinary organs, as in renal lithiasis, in which the constant irritation caused by the presence of a foreign body favours the production of the pathological change. We have also frequently observed it in men with stricture of the urethra, and in women with ovarian tumours and with metritis.

This accidental albuminuria does not give a very favourable prognosis, if the ailment on which it depends is of long standing, as in chronic hypertrophy of the uterus, or hereditary disposition to disease of the generative organs. On the other hand, if the affection of the generative system be of shorter standing, the prognosis is more favourable; and still more favourable is the prognosis, when albuminuria is associated with such affections as chronic stomach catarrh, chronic vomiting, or simple gastric ulcer.

The digestive organs are in these affections unable to assimilate the albuminates; but if no more important lesion, such as scirrhus, be present, a Carlsbad course followed up by one of Franzensbad, is in most cases very successful, especially if the diet be properly regulated, if aliment rich in protein be selected, and thus a limit be put on the excretion of albumen. When alterations of the blood-pressure and obstructions to the abdominal circulation or in the central organ of the circulation cause a similar condition of the kidneys and thus lead to albuminuria, the Carlsbad waters used in baths and for drinking do excellent service.

Albuminuria is also often observed in organic disease of the heart complicated with fatty liver; here too the careful and moderate use of the less warm Carlsbad springs followed by that of the iron waters of Franzensbad is often of distinct advantage. The heart-affection, it is true, remains stationary, but its more grave symptoms are mitigated, its progress is for a time arrested, the fatty liver is reduced, and the albuminuria is diminished.

In the cases of heart-disease with albuminuria that we have treated, we have (probably accidentally) observed no dropsy, or at most slight cedema of the feet; where there has been dropsy, there has been also diffuse nephritis, as proved by the microscopic and chemical examinations of the urine, and sometimes by *post mortem* sections. In organic heart-affections of long standing, caused by venous congestion by hypertrophy of the liver, or by lesions of the spleen, the careful use for short periods of the less warm sources of Carlsbad may give some relief to the symptoms, and help at least to prolong life.

Bright's disease complicated with organic heart affection, especially with hypertrophy and dila-

tation which manifests itself mostly in the left ventricle, or with fatty infiltration, is on the whole a *noli me tangere* for the use of Carlsbad waters. We have had opportunity of proving the value of a diagnostic sign of Bright's disease first pointed out by Lebert, a certain amount of infiltration of the cellular tissue over the shins, whilst the rest of the limb is nearly free from œdema. It is worth looking for. Albuminuria in diabetes always indicates an advanced stage of that disease, and such cases are not fitted for treatment at Carlsbad.

On the whole, a good deal is to be gained by Carlsbad treatment of albuminuria when it is symptomatic of liver, kidney, heart or uterine affections, of intermittents or gout, and albuminuria may be arrested, provided diffuse inflammation of the kidneys or Bright's disease is absent.

The most that can be done for Bright's disease at Carlsbad is, if possible, to improve the blood-crisis, and thus limit the loss of albumen and the pathological change of kidney associated with it.

If chronic diffuse inflammation of the kidneys, in any of the four stages of it that have been described, be sent to Carlsbad, nothing more can be done than to endeavour to regulate the disturbance of nutrition. Such cases are better suited for the saline iron springs of Franzensbad. If there be a high degree of anæmia and the nervous system be much depressed, the powerful iron springs of Pyrmont or of Spa deserve a preference; and in some few cases it is possible by the judicious use of their waters to set bounds to the elimination of albumen; whether at the same time any bounds are set to the pathological change in the kidneys we do not venture to say. In advanced cases of Bright's disease all such treatment is, of course, hopeless. But we hope that we have said enough to show that the Carlsbad waters are of use in forms of albuminuria not depending on that disease.

J. MACPHERSON.

RECENT PAPERS.

- Case of Retro-peritoneal Cancer. By Dr. Charles A. MacMunn. (*Dublin Journal of Medical Science*, July, 1876.)
 Case of Hemianæsthesia consecutive on Typhoid Fever. By Dr. Calmette. (*L'Union Médicale*, July 29.)
 On Vaccination of the Leg: its Importance from the Æsthetic Point of View. By M. Arch-Dessert. (*Le Mouvement Médical*, July 29, 1876.)
 On Anæmia Perniciosa. By Dr. Labadie-Lagrave. (*La France Médicale*, July 29.)
 Putrefaction and its Agents; as Originating Contagious or Infectious Diseases. By D. J. Arnould. (*Gazette Médicale de Paris*, July 29.)
 On Auscultation. By M. Labbé. (*Le Mouvement Médical*, July 15.)
 On Miliary Fever. By Dr. Reibel. (*Gazette Médicale de Strasbourg*, July 1.)
 On Spontaneous Hydrophobia. By M. Putignat. (*Ibid.*)

SURGERY.

ASHHURST ON EXCISION OF THE KNEE AND AMPUTATION OF THE THIGH FOR DISEASE OF THE KNEE-JOINT.—At a recent meeting of the Philadelphia College of Physicians, Dr. J. Ashhurst read a paper on the above subject (*New York Medical Record*, July 8). The paper began with the histories of ten cases of excision, and five of amputation, all performed by Dr. Ashhurst himself. Excision was performed three times for arthritis with

partial ankylosis, twice for arthritis with abscess, once for arthritis following small-pox, and four times for gelatinous arthritis. Nine of these cases had recovered with useful limbs, one, however, still wearing a splint, as the operation was but recently performed; and the tenth case was convalescent, and promised to have as favourable a result as the other nine. Amputation of the thigh was performed in five cases that did not admit of excision on account of the extent of the disease, or of visceral complications. One of these cases only proved fatal. This patient was fifty-one years of age, and a man of intemperate habits; and the operation was performed for acute destructive inflammation of the knee-joint following an injury to the leg. In all the other fourteen cases the arthritis was chronic, and the patients were between five and eighteen years of age.

After concluding the account of this remarkable series of cases, Dr. Ashhurst put his remarks in the form of answers to the following questions.

I. When should the surgeon abandon expectant measures in the treatment of knee-joint disease, and what may be considered the indications for a resort to operation?

II. Operative interference having been resolved upon, how shall the surgeon decide between excision and amputation?

III. When an attempt is made to save the limb by excision, how shall the operation be performed, and what shall be the after-treatment?

I. In answer to the first question it must be premised that most cases of inflammation, even of the larger joints, dependent on blows, sprains, or internal causes, are amenable in the early stages to treatment by rest and extension. Unfortunately, however, the case often appears at first so trivial, that it is neglected until it is too late for the above treatment to be efficacious. Of the ten cases of excision reported above, in only one had the disease lasted less than one year, the duration ranging in the other cases from one to six years. Dr. Ashhurst does not deny that some of these cases might ultimately have got well without an operation, but the limbs secured by the operation were immeasurably better and more useful than the withered and deformed limbs resulting from the so-called spontaneous cures. In deciding on the propriety of an operation in any particular case, the age and general condition of the patient, and the duration and stage of the affection, must be considered. Excision of the knee is not very successful in children under five years of age; these suffer more from the confinement than older children, and, Dr. Ashhurst thinks, are also more liable to the insidious development of tuberculous and other constitutional diseases. In persons past the prime of life, excision of the knee is so fatal, that it should be entirely discarded, and amputation resorted to where an operation is absolutely indicated. The most favourable age for excision is from five years to puberty.

The presence of visceral disease, as a rule, positively contra-indicates excision. An operation is seldom required in recent cases, in which rest, extension, and proper constitutional and local treatment will usually effect a cure. Dr. Ashhurst maintains that these chronic joint-affections, though unquestionably local diseases, are not of exclusively local origin, and that they require constitutional as well as local treatment. Finally, no operation should be performed as long as the disease is confined to the synovial membrane, or, even when all

the tissues of the joint are involved, as long as the integrity of the part is maintained and a hope of preserving a useful joint remains. 'But when the relaxed condition of the joint and the occurrence of consecutive dislocation show that the crucial ligaments and semilunar cartilages have disappeared; when the limb is contracted and helpless, and the patient gives a history of repeated relapses from comparatively slight injuries, or, on the other hand, when the doughy semi-elastic character of the swelling shows the existence of gelatinous arthritis (the typical "white swelling" of the older writers), an operation may be properly resorted to, even if the limb be at the time in a quiet condition. When in addition the joint is in a state of suppuration, and still more if there be caries of the articular surfaces, an operation may be considered (other things being favourable) as almost imperative.' The operation may be performed comparatively early in cases of gelatinous arthritis, in which there is hardly any tendency to spontaneous recovery.

II. Amputation should be performed in preference to excision when the patient is too young or too old, when there are visceral complications, when the disease is too extensive to allow its entire removal without taking away so much bone as would materially impair the usefulness of the limb, and when the question of the time required for recovery is important.

III. In performing the operation of excision, Dr. Ashhurst prefers the transverse incision across the front of the joint, just below the patella. He dissects back the skin and superficial fascia to the level at which he means to use the saw, then cuts directly down to the bone, and removes condyles, patella, and the diseased tissues together. The bones are divided from below upward by means of a Butcher's saw with blade reversed. The femur, in order to retain the natural inclination of the limb, should be sawn in a plane which, as regards the axis of the femur, is oblique from behind forwards, and from within outwards. The tibia should be sawn in a plane transverse to its long axis, with a slight antero-posterior obliquity. The epiphyseal junctions should not be interfered with in children; it is sufficient to remove a slice half an inch to an inch thick from the condyles, and less from the tibia. Any shreds of disorganised tissue may be cut away, but the floor of the wound must be left intact. The patella should always be removed. Tenotomy of the hamstring muscles may be necessary before the limb can be brought into position. Before the patient emerges from the anæsthesia, a posterior splint, bracketed opposite the knee, to allow daily dressing of the wound, should be applied, and left undisturbed for at least a fortnight, and better still for six weeks, at the end of which time the process of bony union will be well advanced. A straight position is the best for the limb, on account of the shortening produced by the operation.

BENNETT ON FRACTURE OF THE COSTAL CARTILAGES.—In an article on fractures of the costal cartilages, in the *Dublin Journal of Medical Science* for March, Dr. E. H. Bennett says that the circumstances under which these fractures take place are, he thinks, capable of being divided into three classes; the first including cases in which the injuries to the cartilages are of secondary importance, complications or results of more extensive and graver injuries; the second, cases where the fractures occur

from direct violence, limited in its action to the seat of fracture, and not involving the thoracic viscera gravely or the adjoining bones; the third class, certainly the least familiar, includes cases where the fracture results from the violence of coughing, or similar muscular exertion, favoured by structural disease of the lungs, pregnancy, etc. The existence of recorded cases of the accident produced in this way is sufficient to put aside the dogmatic assertion—'the accident is invariably produced by external violence.'

In the first class we have opportunities of studying the recent fractures of the cartilages, for such cases are often fatal shortly after the receipt of the injury; in the second occur the instances of united fracture, which possess a greater pathological interest than those contained in the first group. Of the existence of the third, the cases recorded by Gurlt are sufficient evidence. The majority of authors agree as to the direction of the line of fracture, yet, even here, we find some directly opposed opinions. The fracture is commonly described, in the words of Boyer, as being '*nette et perpendiculaire*,' not, as in the ribs, '*inégaie et oblique*.' Anger asserts that but a single instance of oblique fracture exists, an instance recorded in the thesis of Dr. Manuel (Paris, 1855); while, on other hand, a single authority, Gross, holds that 'the direction of the fracture is commonly somewhat oblique.'

In reference to the seat of fracture, the guarded statement of Boyer, 'that hitherto fractures of the cartilages have been observed between the fifth and eighth ribs,' deserves to be noted, for it is one which might well have been followed by more recent writers. We find in the 'Cyclopædia of Practical Surgery' the following:—'Those only which join on to the sternum seem ever susceptible of this injury,' yet many instances of fracture of the eighth and ninth ribs are on record.

Dr. Bennett relates six cases, the characters of which were:—1. Fracture of the cartilage of the first rib on one side; fracture simulating separation of the cartilage of the first rib from its rib on the opposite; 2. Oblique fracture of the third costal cartilage; 3. Fractures of the eighth and ninth costal cartilages, united with overlapping of the fragments; 4. United fractures of the sixth and seventh costal cartilages of the right side; 5. Fracture of the ninth costal cartilage, united by ensheathing callus; 6. Fracture of the eighth costal cartilage, united with angular deformity.

After commenting on the mode of union in cartilage, and on the microscopic appearances, Dr. Bennett sums up in the following conclusions.

1. Fractures of the costal cartilages may be arranged in three groups; the first containing recent fractures, which are consequences of grave injuries of the chest, and mere results of fractures of the sternum or ribs; the second, united fractures caused by limited direct violence; the third, fractures the result of muscular action.

2. The degeneration of the cartilages which precedes their ossification—the cleavage of the hyaline substance—may be regarded not only as a cause predisposing to fracture, but also as a cause determining its direction, which, in the great majority of cases, is transverse.

3. Oblique fractures are possible, chiefly as secondary injuries.

4. The callus in these fractures is developed as in

bone, the broken cartilage participating in its development.

5. The difference between the modes of union in bone and cartilage fractures consists, in the case of overlapping fractures, in the more limited development of callus in the cartilage fractures, and, in all forms of fracture, in the slowness with which the process of union would appear to be completed.

HAMILTON ON FOREIGN BODIES IN THE AIR-PASSAGES.—Professor Hamilton, of the Columbus Medical College, contributes a paper to the first number of the *Ohio Medical Recorder*, for June, in which he puts on record twenty-one cases of foreign bodies in the air-passages. He divides his cases into three groups. The first group comprises four cases. In one, part of a grain of wheat was drawn into the air-passages; in one a piece of privet leaf, and in two, bits of peanut shells; and in all four cases the foreign body was removed in a coughing fit. These cases emphasise the following point, viz. when the foreign body is known to be quite small or soft, flat and irregular, so that it is susceptible of being further softened, and enveloped by the viscid secretion of the air-passages, it is so slightly irritating, and so well adapted for spontaneous expulsion, that an operation is inadmissible.

The second group comprises two cases, in which the body was irregular, and its movements and relations could not be well estimated. In one case, the patient, a child, died suddenly, with croupal symptoms, and a piece of hickory nut-shell was found in the larynx at the *post mortem* examination. In the other, a pregnant woman inhaled a shirt-button with a pin stuck in it. No marked symptoms were excited, and, after a few weeks, the button was coughed up, followed, in a few months, by the pin.

The third group includes fifteen cases. In all of them the foreign body was hard, smooth, and round in outline; in one it was a grain of pop-corn in its natural state; in one a locust-seed; in three a large full bean; in three a water-melon seed; in six a grain of common field-corn, all dry and hard, except one, which was a grain of roasted green corn. In three of these cases no operation was performed; one of the patients died of broncho-pneumonia in seven days, and the other two coughed up the foreign bodies after several weeks, and recovered. In the remaining twelve patients there were thirteen operations, the foreign body being found in most cases at rest in the right bronchus, never fairly in the left. In six cases the body was expelled at once, and in the rest within from one to seventy-two hours. Where the body remains without motion in the bronchus after the operation, Professor Hamilton advises that the patient be kept within reach, for sooner or later some movement will put it in motion, and then, on simply dilating the opening, expulsion will take place. One case died of broncho-pneumonia, which had existed before the operation. In three cases laryngo-tracheotomy was performed, followed by impairment of voice in two, and the same result followed one of the tracheotomies. The patients were all under seven years of age, and the foreign bodies had been in the air-passages from two hours to ninety-six days.

On adding these fifteen cases to a number of cases tabulated by Dr. Weist, of Richmond, in which the foreign bodies were similar to those in our third group, we find that out of forty-five cases treated without operation, fourteen, or thirty-one per cent.,

died, while out of forty-six treated by operation, twelve, or twenty-six per cent., died; a difference of five per cent. in favour of the operation. These figures prove the incorrectness of the opinions widely spread among medical men, that foreign bodies in the air-passages absolutely demand operation, and that the cases are of such emergency as to preclude sending a long distance for competent surgical aid.

Professor Hamilton, for obvious reasons, opens the trachea above the isthmus of the thyroid gland, and divides usually four of the tracheal rings. Where this cannot be done without injuring the isthmus, he divides the cricoid cartilage and part of the crico-thyroid membrane, which, however, is almost necessarily followed by impairment of voice.

FRUSCI ON A CASE OF ANGIOMA PRESENTING PERIODICAL TURGIDITY.—In the *Annali Clinici dello Spedale Incurabili de Napoli*, anno i. fasc. 2, Dr. Frusci describes the case of a laundress, aged eighteen, who for four years had been subject to a blue coloured tumefaction, accompanied with intense pain, on the right fore-arm and hand. This swelling appeared in March of each year, and lasted twenty or thirty days. Dr. Frusci diagnosed it as a deeply seated diffuse venous angioma. He cannot explain the annual recurrence on the hypothesis of vasomotor action; he remarks, however, that Bell, Launay, Esmarch, Kreysig, Porta, and Virchow have observed periodicity in the development and exacerbation of sanguineous tumours.

A. HENRY, M.D.

VIENNOIS ON THE CAUSES OF REAL SHORTENING OF THE LIMB AFTER COXALGIA WITHOUT DISLOCATION OR DISPLACEMENT OF THE HEAD OF THE FEMUR.—M. Viennois (*Gazette Hebdomadaire*, January 7, and *Journal des Connaissances Médicales*, February 15) divides coxalgia into five varieties: 1. Coxo-femoral arthritis or true coxalgia; 2. Primary osteitis of the upper end of the diaphysis of the femur; 3. Primary osteitis of one of the bones forming the cotyloid cavity; 4. Inflammation of bones close to the joint, but not in connection with the synovial membrane (for instance, the great trochanter); 5. Periosteal inflammation developed in the connective tissue and tendons of the pelvi-trochanteric region. The fourth and fifth varieties are pseudo-coxalgic affections.

In the first variety, or true arthritis, the synovitis is not a cause of much shortening. It is only when the epiphyseal end of the femur is attacked primarily or simultaneously, that the longitudinal growth of the limb is considerably disturbed. The cause of the shortening is to be sought in the general atrophy of all the tissues of the limb induced by long rest, immobilisation, and disuse.

In coxalgia from primary osteitis, on the other hand, the growth of the bone is directly concerned, and shortening is the speedy result; the younger the subject, the more obvious is this.

Shortening from the first cause is to be combated by electricity, friction, and gentle traction by elastic bands; and, moreover, by keeping the limb in a state of abduction, giving it an apparent lengthening, we may diminish the inevitable effects on its functions. The author follows views expressed by M. Ollier.

OTIS ON GLEET AND ITS RELATION TO URETHRAL STRICTURE.—Dr. F. N. Otis states (*American*

Clinical Lectures, vol. i. p. 10) that in cases of urethritis (not venereal in origin) or gonorrhœa (of venereal origin) where complete recovery does not take place within four or five weeks there is usually a subsidence of the more acute symptoms, and the case is then characterised by a painless or nearly painless discharge, more or less profuse more or less purulent, which persists for weeks, perhaps months, often years, at times reduced to a mere secretion, which fastens the lips of the meatus together. This chronic form of urethritis is commonly known as gleet. 'Chronic urethral discharge means stricture. . . . I am quite well aware that well-defined stricture may be present without a palpable discharge; there is always to be found evidence of a certain degree of irritation present in all such cases, but there may be no appreciable discharge; when, however, there is discharge, there will in every case be found, if the examination is efficiently made, a well defined and unmistakable point of stricture. . . . The least contraction at any point in the urethral canal has been demonstrated as capable of causing the indefinite continuance of an urethral discharge, and even of establishing it, *de novo*, without venereal contact.' ('Urethral Discharges,' *New York Journal*, June, 1870. F. N. Otis, M.D.)

He then describes again his urethrometer and the mode of using it, and insists on the necessity for ascertaining in cases of stricture the normal calibre of the urethra in each particular case.

He again states the fact that the meatus urinarius is not a measure of the size of the normal canal, and refers to his deduction made some time ago from the examination of several hundred cases, 'that a constant relation exists between the urethral calibre and the size of the penis with which it is associated.' (See notice of 'Stricture of Male Urethra, its radical cure,' by F. N. Otis, M.D., *LONDON MEDICAL RECORD*, November 15, 1875). 'Whenever there is gleet in the sense of a chronic urethral oozing or discharge, an intelligent and thorough exploration with suitable instruments will invariably discover a distinct contraction of the meatus urinarius, or a readily recognised coarctation of the urethra at some point; and further, the complete restoration of the urethra to its normal calibre and suppleness at the contracted points will be required to warrant the statement that a permanent cure has been effected. The complete division of stricture has in my experience resulted uniformly in its complete disappearance within a period varying from three months to one year; and the cure of gleet has, as a rule, followed the complete division of stricture within a period varying from twenty-four hours to four weeks after the final operation.'

That treatment of gleet by a systematic introduction of sounds and bougies has often cured the discharge, 'no one will for a moment gainsay, but that it permanently removes the cause no one at this day is likely to affirm.

'For a permanent cure, a complete division of the contracting stricture must be made, and any treatment which falls short of this will, of necessity, fail in doing more than to temporarily remove the obstruction, which has been the cause of the gleet.'

Appended to the paper are statistical tables of fifty cases of gleet, or chronic urethral discharge, associated with urethral stricture. In all, the gleet had existed not less than several months. The ages varied from nineteen to sixty-eight years. The number of strictures per man varied from one at the

meatus to ten within a length of four inches and a-half. The fifty individuals presented a total of 137 strictures, including one case of five bands. Of the total number of strictures, twenty were found to be situated at the meatus, thirty-four in the course of the first inch from the meatus, twenty-three in the course of the second inch, twenty-nine in the course of the third inch, fifteen in the course of the fourth inch, eleven in the course of the fifth inch, and four in the course of the sixth inch. Analysing the causes, it may be seen that forty-eight cases were attributed to gonorrhœa; one was attributed to paraphimosis, and one to masturbation.

In one case only the stricture measured no. 8 French gauge. The rest varied from no. 16 to no. 37 Fr. Of the 137 strictures, 112 are stated to have varied from nos. 20 to 34, both included.

The normal calibre is given in forty-seven cases, and of these thirty-three measured from 30 to 32 Fr. The lowest was 28 Fr. and the highest 40 Fr.

The total number of operations on fifty cases was 101; twenty-one cases were operated on once; seventeen, twice; five, three times; two, four times; three, five times; one, eight times; and in one case the number of operations is not stated.

JOHN CROFT.

LEVIS ON A SUBSTITUTE FOR ESMARCH'S BANDAGE.—Dr. R. J. Levis, surgeon to the Pennsylvania Hospital, says, in the *Philadelphia Medical Times* of April 29, that he has for a long time discarded the use of the elastic webbing and constricting tubing, as proposed by Professor Esmarch, in favour of a bandage made of pure India-rubber. The bandage which he is in the habit of using for encasing the limb is five yards long and two and a half inches wide; and the constricting band or tourniquet is of a much thicker and stronger material, two yards in length and one inch and three-quarters in width. The pure India-rubber bandage has the merits of greater elasticity, strength, durability, cleanliness, cheapness, and more perfect adaptability. The constricting band is perfectly effective as a tourniquet, without the great disadvantage of the narrow tubing of Professor Esmarch in producing severe linear pressure, which has often caused more or less enduring paralysis from extreme nerve-compression. Dr. Levis's tourniquet-band is without chain and hook, the final securing being simply effected by tying together pieces of strong cord, one of which is permanently attached through a hole in each end.

WYETH ON THE SURGICAL ANATOMY OF THE ARTERIAL SUPPLY OF THE TIBIO-TARSAL REGION. In the *American Journal of Medical Sciences* for April, Dr. J. A. Wyeth, Assistant to the Professor of Anatomy in Belvedere Hospital Medical College, contributes an article on the surgical anatomy of the arteries of the tibio-tarsal region, with special reference to amputations at this part. Having commented on the statements of Gross, Erichsen, Leidy, and other surgeons and anatomists, he examines the results of eighty observations carefully made by himself, summing up as follows.

In 72 of 80 cases the posterior tibial artery bifurcated into the external and internal plantar, on a level with a line drawn from the most dependent portion of the internal malleolus to the middle of the heel's convexity. In 4 of 80 cases this bifurcation occurred a quarter of an inch below this point. In 4 of 80 cases it was half an inch below this point;

any variation from the usual point of division tending, in his experience, invariably downward.

Although anatomists give the arterial supply to the calcanean region (internal calcanean arteries) as coming from the posterior tibial artery (as shown in extracts given heretofore), the *résumé* of tabulated dissections shows that out of a total of 80 cases, in 38 there was not a single calcanean branch derived above the terminal bifurcation of the posterior tibial artery, while in all of these 80 dissections one or more good-sized calcanean arteries were derived from the external plantar within one and a quarter inches of its origin. In 80 cases the number of calcanean arteries derived from the posterior tibial was 51. In 80 cases 18 branches were derived opposite the point of bifurcation, and distributed to this region.

In 80 cases the number of calcanean arteries derived from the external plantar was 221, and every one of these was safely inside the line of incision in amputations at the ankle-joint, when that incision is not more than one-half inch posterior to the axis of the leg, with the foot at right angles to the leg. In all cases articular branches are derived either from the posterior tibial or internal plantar, or from both. In some exceptional cases the internal plantar gave off small branches to the heel.

The anterior flap is plentifully supplied in all instances by branches from the anterior tibial, especially the malleolar arteries.

The anterior and posterior peroneal distribute branches to the outer portion of the calcanean flap, those from the posterior anastomosing with the calcanean branches of the external plantar, and with those of the posterior tibial, when they are present. Dr. Wyeth does not think the branches from the peroneal arteries sufficiently large to supply blood enough to maintain the integrity of the calcanean flap, especially when their anastomoses are cut off by section of the posterior tibial, or of its plantar branches, too near their origin.

The relation of the posterior tibial artery is quite constant with the two muscles between which it runs; the flexor longus digitorum in front, and the flexor longus pollicis behind. The most reliable guide to this vessel is its pulsation, but in the event the tourniquet is applied, the thumb should be placed over the middle of a line drawn from the inner malleolus to the centre of the heel's convexity, while the four lesser toes are held still by an assistant; the surgeon moves the great toe, and marks the point at which he feels the tendon gliding under his thumb. The tendon of the longus digitorum is found in the same manner, and half-way between the two a curved incision, with its concavity towards the malleolus, will be over the artery. The relations of the veins on either side, and of the posterior tibial nerve behind, are among the least variable features of the anatomy of this region. In two cases he has seen the artery immediately behind the inner malleolus. When the posterior tibial is small, the peroneal branches undergo compensatory enlargement.

Dr. Wyeth has also made seven additional dissections of this region, with the following result.

In 4 out of 7 cases, calcanean branches originated from the posterior tibial artery—1, one inch; 1, one-half inch; and 2, one-eighth of an inch above the bifurcation. In 7 cases, 2 calcanean branches were derived opposite the bifurcation. In 7 cases, 19 calcanean branches were derived from the external plantar, within one inch of its origin; viz. 3, within

one-sixteenth; 2, within one-eighth; 1, within one-fourth; 4, within one-half; 4, within three-fourths; and 5 within one inch of the bifurcation. Articular branches were, as usual, from the posterior tibial and internal plantar. The posterior tibial bifurcated in every case, as usual.

BIGELOW ON EXCISION OF THE ELBOW-JOINT.—At a meeting of the Boston Society for Medical Improvement (*Boston Medical and Surgical Journal*, March 30) Dr. H. J. Bigelow related a case of caries of the elbow-joint, and made some special remarks on the mode of operation. It had occurred to Dr. Bigelow that if the condyles were not diseased, and could be safely left, and only the articulating surface of the humerus removed, the muscles attached to these condyles would remain undisturbed. The condition of the arm after operation would then approximate more nearly that of a case of excision described and figured by himself in 1867, wherein he had been able to strip the periosteum from the condyles without disturbing the muscles. The result was that the periosteum reproduced the condyles for muscular attachments, the flattened extremity of the humerus somewhat resembling a closed fist with the forefinger and little finger extended.

This was imitated in the present case by an operation as follows. After the median incision was made and the ulna cleaned, this bone was sawed partly through, about an inch and a half from the olecranon, and the section completed with forceps. The fragment being removed, the humerus could now be dislocated backward. The ulnar nerve was next drawn a little to one side, and the humerus sawed from the bed of this nerve obliquely into the olecranon depression, and similarly on the outside from the external condyle into the same depression.

The whole articulating surface was now readily broken out, leaving the condyles. The orbicular and lateral ligaments being now divided, the fore-arm was dislocated backwards, the radial extremity sawed off, and a few remaining points chipped out with gouge-forceps.

The result seemed an excellent one, and the wound was promising well, when the patient died from widely diffused embolism.

GATEWOOD ON THE TREATMENT OF GONORRHOEA.—Dr. W. K. Gatewood, of Jamaica, Virginia, writes in the *Virginia Medical Monthly*, that he uses the following treatment in cases of gonorrhœa, and that he has found it more satisfactory in its results than any other.

He orders the patient to take a saline cathartic every morning to keep his bowels in a good lax condition. He prepares for him a bottle of bicarbonate of potash, and arranges the dose so that he takes a drachm every day. An injection of twelve ounces of thin gum acacia mucilage is prepared, to which are added two drachms of carbolic acid. Sometimes the injection is weakened, when the inflammation is high. Dr. Gatewood always enjoins rest and a light diet, and positively prohibits all stimulating drinks, which advice is rarely ever followed. He always instructs the patient first to urinate, and then to wash the urethra out with tepid water before using the injection; to do this night and morning. If the case seem one of very high state of inflammation, and he can confine the patient to bed, he adds tartarised antimony to the potash, and uses water-dressings to the member. Since adopting this plan he never has

any dyspeptic symptoms, which follow often the use of balsam, yellow sandal, etc., and his patients get well much sooner, and at a much less cost. He treated ten cases last January, and all were cured perfectly in from eight to fifteen days, and on their feet all the time.

BATES ON THE TREATMENT OF FRACTURES BY THE BRAN-BOX.—Dr. A. Bates, of Viroqua, Iowa, calls attention (in the *Medical and Surgical Reporter*) to a mode of treatment for fractures, and other severe injuries of the leg and ankle, which he has successfully used, both in simple and compound fractures. A piece of inch board, long enough to reach from the upper part of the thigh to a little beyond the foot, about seven inches wide at the upper end, and five inches at the lower end, serves as the bottom of the box. A foot-board of the same thickness is nailed to the lower end, and two side pieces of thinner material, and at least seven inches wide, are firmly nailed to the bottom and foot-boards, and the box is complete. In applying it, a folded cloth should be laid in the upper end, and the bottom covered with unsifted corn meal an inch deep. The surgeon holding the limb by the knee and ankle, an assistant places the box beneath, and the limb is let down into it, so as to rest lightly on the meal, and held firmly while meal is poured in and compacted under and around it with the hands, assisted by a blunt wooden spatula, until the parts are immovable, soft cloths being placed between the thigh and the upper part of the box. Care must be taken that the meal is well compacted around the knee and ankle; indeed, the whole limb must be equally secured.

To prevent disturbance from involuntary movements of the patient, a small pad may be placed on the knee, and secured by a bandage passed around the outside of the box. A considerable amount of surface may be left uncovered, and remedies may be applied to the injured parts if it is deemed necessary. Dr. Bates has thought best to take the limb out of the box and wash it thoroughly, at least once a week; but perhaps all that is really necessary is to remove that part of the meal in contact with the skin, as often as it becomes saturated with perspiration, and this can be done, a part at a time, without moving the limb.

Some of the advantages said to be possessed by this method are the following. 1. The limb can be examined at any time without handling it. 2. The parts are immovable, and entirely at rest. 3. The circulation is not interfered with, since the pressure is not great, and is entirely even. 4. The dressing is more comfortable to the patient than any other that requires confinement to bed. 5. The material is cheap, and can be obtained almost anywhere. 6. The treatment is simple, and can be well applied by almost anyone.

Various modifications might be suggested to meet particular cases, but these will suggest themselves to the surgeon when occasion calls for them.

GALLOUPE AND GRAVES ON A CASE OF SLOUGHING OF THE SCROTUM; RECOVERY.—Drs. I. F. Galloupe and T. T. Graves relate the following case in the *Boston Medical and Surgical Journal* for June 29. On December 29, F. B., twenty-one years of age, and in good health, while at work near a revolving shaft moved by steam-power, had his apron and pantaloons caught and entirely torn off. On

examination it was found that the scrotum had been included with the clothing, and torn off entire as far as the inguinal canals; on the right side the wound extended somewhat higher than that point, the skin covering the penis was torn, and that of the perinæum stripped off back to the anus. The testes and spermatic cords were left uninjured, but completely uncovered.

It was thought best to replace the scrotum, hoping that a portion of it at least would not slough, which hope was not entirely disappointed. The only alternative seemed to be to remove the testicles, to do which all that would have been necessary would have been to cut the cords and secure the vessels. During the examination, and at the dressings subsequently, the testes were separated and laid upon the groins, to bring the wound of the perinæum the better into view. On the third day the scrotum had sloughed, except a piece about an inch and a-half square upon the left side of the penis. The entire wound was dressed with cotton-wool, soaked in an aqueous solution of carbolic acid, and no other dressing was used throughout the treatment. Healthy granulations soon covered the wound and testes; the spermatic cords began to shorten, and soon drew the testicles into contact with the external inguinal rings. The wound healed rapidly, the relic of the scrotum growing until the left testis was covered. The right one being still bare, it seemed as though it would be necessary to remove it. On examining the wound, however, on February 5 (the patient had not been seen for several days previously), it was found to have disappeared of its own accord, by escaping under the skin of the groin, and lay above the pubes, where it remained. The entire wound was healed on February 27.

BRIDGON ON EXCISION OF THE WRIST-JOINT FOR CARIES.—At the meeting of the New York Pathological Society on May 10, (*New York Medical Record*, June 10) Dr. Bridgon presented carious bones removed by the operation of excision of the wrist-joint. The patient was aged thirty-nine, a deaf-mute, married, a cooper by occupation, and of temperate habits.

A tumour made its appearance on the back of his right hand three years ago. It was painless, and grew slowly, and was probably ganglionic in character. It was subsequently removed by a cutting operation, and whilst recovering from the effects of this he fell and sprained his wrist; this was followed by swelling of the hand and forearm, which necessitated the use of incisions, which discharged for a long time. On admission into hospital on April 19, his general health was good. The right hand was swollen, the fingers extended, and incapable of motion. The concavity of the palm was effaced, and on its surface were the openings of two fistulous tracks communicating with carious bone. There was very slight motion at the wrist-joint, none at the metacarpo-phalangeal and phalangeal articulations; all the anatomical points were masked by hard brawny infiltration. It being believed that any partial removal of the bones involved would only lead to progressive destruction of the remainder, the operation devised and advised by Professor Lister of Edinburgh was proposed, and accepted by the patient.

On April 27, an incision was commenced over the middle of the back of the second metacarpal bone; it was carried upward in a line with that bone to the carpo-metacarpal articulation, and then midway

between the tendons of the thumb and index as high as the inferior border of the radius; the tendons of the thumb were drawn outwards, those of the common extensor inwards, the knife being kept in close contact with the bones. Then an incision was made on the inner border of the hand, reaching from two inches above the styloid process of the ulna to the middle of the metacarpal bone of the little finger; these incisions permitted all the soft parts to be separated from the bones on both palmar and dorsal surfaces, and gave abundant room for completing the subsequent steps of the operation, and in this dissection it was found that the os magnum had disappeared entirely, and that the contiguous bones were carious and more or less fused by ankylosis. All the carpal bones, the basis of the metacarpal, the inferior articulating surfaces of the radius and ulna, were removed; the cartilages of the latter were intact; but in consonance with the views of Lister, they were all carefully removed. No tendons were injured save those inserted into the carpal bones themselves, and after removal of Esmarch's bandage, which had been used during the operation, it was not found necessary to apply a single ligature.

On the 29th, carbolic acid irrigation was commenced. On August 10 everything had gone on remarkably well; the limb, or rather forearm, was one inch shorter than its fellow, and the parts involved were consolidating; the distance between the truncated radius and ulna and the metacarpal bones was about an inch and a quarter.

THE INTRA-ARTICULAR PRESSURE OF THE KNEE-JOINT: TREATMENT OF JOINT-DISEASE BY EXTENSION.—A writer in the *Dublin Medical Journal* for July says: Some interesting observations and experiments have, of late years, been made in reference to the intra-articular pressure of the knee-joint under different conditions, which have bearings of importance upon the physiology and pathology of that articulation, and may lead to practical suggestions of value. Amongst the most important are those of Bonnet, Reyher, and Ranke. The principal factors which these observers have taken into consideration, as modifying the above-mentioned pressure are—1. The position of the limb; 2. The condition of the peri-articular muscles; 3. The amount of intra-articular effusion; and 4. The traction to which the limb has been subjected. The position of the maximum capacity of the joint, which, of course, corresponds to that of minimum pressure, is the subject of some difference of opinion. While Bonnet asserts it to be that of flexion of the leg at an angle of 60° , the other two observers reduce the angle to 30° . The explanation of the discrepancy appears to be that Bonnet's observations were made upon dead bodies, in which the muscles were either removed or in the condition of complete relaxation which follows cadaveric rigidity; and that it is owing to the action of these (an element which he neglects to take into consideration) that the angle becomes changed. Ranke found that (taking the muscles into account) on starting with the attitude of complete extension, the pressure diminishes with the flexion of the leg, and attains its minimum at the angle named (30°). On further increasing the flexion the pressure increases rapidly, and becomes considerably greater than the primitive pressure corresponding to full extension, even before the leg has been flexed to a right angle. The contraction of the peri-articular muscles has considerable effect, according to the

measurements of Ranke (*Centralblatt für Chir.*, 1875), in augmenting and modifying the intra-articular pressure. Ranke was unable, from his observations, to establish any relation between the degree of pressure and the amount of intra-articular infusion; but, in individual cases, the law above-mentioned, as to the pressure in different attitudes of the limb, holds, whatever be the amount of effusion. The effect of permanent or continuous traction of the limb (as, e.g., by a weight or elastic force) upon the intra-articular pressure is modified by the other factors. By the expedient of forcing needles into the condyloid extremity of the femur and into the head of the tibia, Reyher (*Deut. Zeitsch. für Chir.*, 1873) has demonstrated ocularly that a moderate weight is capable of producing a veritable and measurable separation of the articular surfaces—a traction of 100 livres producing an elongation of $3\frac{1}{2}$ mm. He has further observed that, in cases where the quantity of synovia is normal or but very slightly augmented, the effect of continuous traction is to diminish the pressure within the joint. Paschen (*ibid.*) has already made the same experiments and observations with reference to the hip-joint. The effect is the same if the muscles be relaxed or paralysed, whatever be the amount of effusion. But if the quantity of effusion be considerable and the muscles active, the effect of extension by weight will be an increase of the pressure. Some of the applications of these observations to clinical and practical surgery are sufficiently obvious. They illustrate the slightly flexed attitude which the limb tends to assume in acute synovitis; but, above all, they indicate the rational employment of continuous extension ('la methode de distraction,' as it is termed) in those cases (of preference) in which inflammatory affections of the joint are attended with slight synovial effusion. Reyher would not, however, entirely reject the treatment of acute synovitis with effusion by this method, but would advise aspiration of the joint as a rational preliminary measure, after which it may be adopted in accordance with the principles here laid down. Morosoff (*Centralbl. für Chir.*, 1875) even goes so far as to assert that the light and uniform compression of the articular structures produced by traction in these last cases is useful. Another mechanical effect of traction upon the limb, and one which the last-mentioned observer more especially draws attention to in the case of the hip-joint, is of importance in reference to this plan of treatment—viz., the alteration of the points of contact of the articular surfaces, which, in the cases of both the hip and knee-joints, the different attitudes assumed by the limb under different degrees of force prove to take place. We may then enumerate these as amongst the various advantages claimed for the method of treatment of joint affections by extension; the modification of the intra-articular pressure; the diminution of the contraction of the peri-articular muscles; the alteration of the points of contact of the articular surfaces; and, finally, the rest and immobilisation of the articulation.

RECENT PAPERS.

- Hypertrophy of the Liver, Splenotomy: Cure. By Dr. Péan. (*L'Union Médicale*, July 29.)
 Cases of Disease treated by Dressing. By MM. Kalla and Aubert. (*Lyon Médical*, July 10.)
 Treatment of Foreign Bodies in the Pharynx or (Esophagus). By Mr. Thomas. (*Birmingham Medical Review*, July, 1876.)

Gangrene of the Fore-Arm from an Embolism of the Brachial Artery: Late Amputation: Cure. By Drs. Von Wetter and Deneffe. (*Bulletin de la Société de Médecine de Gand*, June, 1876.)

Two Cases of Aneurysmal Disease. By Dr. Duroziez. (*L'Union Médicale*, July 18.)

Spontaneous Fragmentation of Vesical Calculi. By Dr. P. Bonhomme. (*L'Union Médicale*, July 18.)

Case of Hydatids of the Pelvis and Abdomen. By H. W. L. Browne. (*Birmingham Medical Review*, July, 1876.)

Suppurating Phlebitis of the Right Leg consecutive on a Dissecting Prick of the Left Hand. By M. Fernand Charcot. (*L'Union Médicale*, July 13.)

Multiple Tumours presenting the Histological Characteristics of Sarcoma: Cure, coinciding with the use of Cod-Liver Oil. By Dr. Tripiér. (*Lyon Medical*, July 16, 1876.)

A Case of Fracture of the Spine and Abscess of the Spinal Cord. By Dr. Feinberg. (*Berliner Medicinische Wochenschrift*, August 7.)

A) Further Contribution on Posterior Catheterism. By Dr. Hans Ranke. (*Deutsche Medicinische Wochenschrift*, July 22.)

MATERIA MEDICA AND THERAPEUTICS.

HOLLIS ON THE TREATMENT OF EPILEPSY BY BROMIDE OF SODIUM.—Dr. W. A. Hollis (*British Medical Journal*, July 1, 1876) reports the effects of bromide of sodium in eleven well-marked cases of epilepsy, from which he concludes that there are some active therapeutic properties in the sodium salt.

As regards the females whose cases are described, Dr. Hollis carefully excluded pure hysteria, and in doubtful cases made use of a justifiable means of proof, which consisted in omitting the dose of the salt and substituting camphor water. In a case of this kind the fits were decreased in number from twelve in the fortnight to three in the two weeks, on returning to the sodium salt. The prognosis in some of Dr. Hollis's cases was apparently very unfavourable, yet the results of his treatment are extremely satisfactory.

For instance, in Case I., a boy aged fifteen, who had been the subject of fits since his birth, the attacks were kept in abeyance when the salt was administered in combination with a decoction of bark.

Case II., a male, aged twenty-two, who had been subject to epilepsy since an attack of sunstroke in Bombay, was free from fits during the continuance of the treatment with the salt, which extended over three months. One fit only occurred in five months, and this was subsequent to the cessation of the treatment.

In describing Case IV., a child, two years old, Dr. Hollis remarks that the bromides appear to exert a greater influence upon the so-called 'convulsions' of children than they do upon the more confirmed epilepsy of adult age, he having rarely found a case of such disease which did not speedily yield to small doses of these salts.

Case VI., a blacksmith, aged eighteen, had no return of the epilepsy during the five weeks he was under treatment.

Case VII. Although the fits in this girl were said to be due to a blow on the head, yet as far as the epilepsy was concerned, the treatment was very successful.

Dr. Hollis's paper is illustrated by a concise table, from which we abstract the following formulæ for the treatment of epilepsy by the bromide of sodium.

- (1) R Sodii Bromidi, gr. xv.—gr. xl.
Aquæ, vel Aquæ Camphoræ
vel Decocti Cinchonæ Pallidæ, ʒj.
ter die.
- (2) R Sodii Bromidi, gr. xv.—gr. xl.
Tinct. Cannabîs Indicæ ℥xv.
Aquæ ad ʒj.
ter die.
- (3) R Sodii bromidi, gr. iii.
Decoctæ Cinchonæ Pallidæ ad ʒij.
ter die.
(For a child, aged two years.)

[I. Economists have advocated the use of chloride of potassium in the treatment of this disease, and, proceeding onwards, we shall doubtless, ere long hear of chloride of sodium taking rank as a specific for epilepsy. We trust, however, that the good results recorded in this valuable contribution to therapeutics may strengthen the opinion that the value of bromide of potassium is due to the bromine and not to the potash contained in the salt.—*Rep.*]

H. SUTHERLAND, M.D.

GALLOIS AND HARDY ON THE CHEMISTRY AND PHYSIOLOGY OF MANÇONA BARK (ERYTHROPHLEUM GUINEENSE).—MM. N. Gallois and J. Hardy have published (*Archives de Physiologie*, May and June, 1876) an excellent article on this subject, of which the following is a short *résumé*. This bark is used by the natives of the West coast of Africa as a poison for their arrows; the tree from which it is obtained has been described by several naturalists, and is one of the Leguminosæ, sub-order Cæsalpinieæ; it grows to the height of about 90 feet, with a cylindrical trunk about 6 feet in diameter, and is called by the natives Tali or Teli. The wood is very hard, and much used for domestic purposes, as it escapes the attacks of white ants. The bark itself, which is used for poisoning arrows, and to make the test liquids for criminals, is usually in the shape of flattened irregular reddish pieces with roughened surfaces; it is hard, fibrous, inodorous, and causes violent sneezing when pulverised. It is said by travellers to cause the death of horses if chewed by them. Boiled with water it furnishes a red liquid, used by the natives as an emetic and purgative.

Experiments made with extracts of the bark and leaves on mammals and amphibia, show that both contain an actively poisonous principle, causing death in about 35 minutes. The symptoms produced were rapid and difficult respiration and anxiety, dilatation of the pupils, followed in a few minutes by the fall of the animal, convulsions and death. In the mammals the ventricles of the heart were found dilated and filled with the clot, the lungs engorged with blood and dotted with capillary hæmorrhages; the brain and cord healthy. In the amphibia, the ventricle was arrested in systole. In both, the contractility of the ventricles could not be excited by the galvanic current, although the other smooth and striped muscles retained their electro-contractility.

An active principle, to which the authors give the name of erythrophleïne, was obtained by them from the bark; they consider it to be alkaloidal. The substances obtained by two methods differed slightly from each other, one being a transparent amorphous matter, of a clear amber colour, and firm and gum-like to the touch; the other was of a yellowish-white colour, transparent, and crystalline.

The effects of these substances on animals were found to be analogous to the effects produced by the extract of the bark; moreover it was found that the

effect on the heart was the same, whether the poison was applied directly to that organ or came through the circulation.

Erythrophlæine is then a muscular poison; above all, a poison to the heart. Warm-blooded animals die immediately the heart is paralysed, but in frogs life persists during a variable time. A dose of $\frac{1}{2}$ to 1 milligramme placed directly on the heart, or 2 milligrammes injected under the skin of the foot, stops a frog's heart in five to eight minutes. A dose of 4 milligrammes injected under the skin of a rabbit kills it in some hours. Four centigrammes injected at intervals into the cellular tissue of a middle-sized dog, killed it in one and a-half hours, although it was curarised, without which probably death would have occurred sooner, as it would also probably if the dose had been given all at once. In warm-blooded animals, erythrophlæine produces convulsions and extreme dyspnoea, consequent upon the disturbance of hæmatisis; in cold-blooded animals it causes a progressive stupefaction, which goes as far as complete relaxation of the muscles, and during which death takes place. The muscles first impregnated by the poisonous fluid are the first to be paralysed; while those protracted by a ligature from its influence preserve their electro-contractility. The cardiac muscle is paralysed before the smooth and striped muscles, on account of the large quantity of poisoned blood which it receives. The effect is especially rapid when it is bathed directly by the solution, and then the organ becomes insensible to the electric current. In warm-blooded animals the heart on necropsy was always found soft and dilated, the contained blood giving the reactions of erythrophlæine. In frogs the heart's action became slower at first, and afterwards the ventricle stopped in systole, the auricles generally in diastole. In the dog the heart's action was increased up to the final period of poisoning, and in three dogs the arterial tension was raised after the administration of the drug. The double chloride of erythrophlæine and platinum acts exactly like erythrophlæine in causing the stoppage of the heart in the frog.

Atropine does not re-awaken the movements of the heart paralysed by erythrophlæine, nor does it prevent its action. Curare decidedly retards its effects. The leaves, seeds, and probably other parts of *Erythrophlæum coumanga*, an allied species, contain an alkaloid which acts like a poison to the heart, and which by its chemical composition approaches erythrophlæine, if it be not identical with it.

It is difficult to say whether *Mançona* bark is susceptible of therapeutic applications. Sternutatories have no longer their place in medicine, but it shares with digitalis, at first at least, the power of raising the arterial tension; and possibly if given in small doses its effects might be very different from those observed with the large doses given in these experiments. ROBERT SAUNDBY, M.B.

FOX ON THE TOPICAL USE OF BIBULOUS PAPER. At a meeting of the New York Medical Journal Association on May 19 (*New York Medical Record*, June 10) Dr. G. H. Fox read a paper on the topical use of thin bibulous paper in affections of the skin and mucous membranes. Two varieties of the paper were described: the French, or that used by dentists for absorbing the saliva while operating about the mouth; and the Japanese. The former was made of vegetable fibre containing an admixture of wool; could be easily reduced to a pulp by moisture; and

was capable of absorbing at least five times its weight of water. Its powers of absorption, perhaps, were no greater than those of good lint, but it absorbed far more rapidly. The Japanese paper, when moistened, was not reduced to a pulp, but could be rolled into cylinders, and then would resist a large amount of traction. It could, therefore, be rolled and made to enter sinuses, the urethra, etc., if desirable, and was sufficiently strong to permit its easy removal. Dr. Fox regarded the paper, more especially the French variety, as a cheap and convenient substitute for lint, cotton, or absorbent powders, and that it could be easily used in a goodly number of cases. It might be used for cleaning bleeding surfaces, and would make an excellent substitute for sponges, which are liable to convey the germs of disease from one person to another. In the treatment of the exuding forms of skin-disease, it was not regarded as of sufficient value to be worthy of recommendation. Its greatest value had been seen in the treatment of venereal disease, particularly genital sores. It had, however, served a very good purpose in the treatment of eczema of the breast occurring while nursing. The breast was simply covered with the paper, and frequently changed. When rolled into pellets of varying size, it formed a most admirable means for bringing fluid caustic substances into exact contact with the surface to be cauterised, and that surface only; for example, the application of nitric acid to the surface of a chancre. When the pellet had been used it could be thrown away, and transmission of the disease by means of instruments, etc., was readily avoided. It was said that the best dressing for venereal sores was that which kept the discharge most constantly absorbed. Lint and cotton might do that, but they were difficult to remove, and a powder would form a crust that would be objectionable. The spongy paper readily absorbed the discharge, and if frequently renewed, would keep the sore and surrounding parts clean without washing. As compared with lint, the paper was regarded as equal in every respect, and in many respects superior, because it absorbed a larger quantity and more readily, was easily removed, and cost only about one-fifth as much. The thin bibulous paper might be medicated, and specimens were exhibited medicated with fifty per cent. solution of carbolic acid; with persulphate and perchloride of iron, when it might be substituted for styptic cotton; with fifteen per cent. ethereal solution of iodoform, not specially recommended, however; with thymol, calingula, etc.

GRAY ON THE REDUCTION OF ANIMAL HEAT BY THE USE OF GELSEMIUM.—In an article on this subject in the *New York Medical Record* for June 10, Dr. G. H. Gray says that gelsemium is unrivalled as a febrifuge, and that he has never been disappointed in it as an agent for reducing temperature. He relates some cases in illustration.

He was called to see a child who had been listless constipated, without appetite, complaining of head ache and thirst for nearly a week. He was in bed with a coated tongue, very hot, dry, and rough skin flushed face, pulse 147, respiration over 40, and temperature 104°6'. Dr. Gray prepared a mixture consisting of ten drops of tincture of gelsemium, ten grains of bromide of potassium, and water half a small tumblerful, directing the mother to give a teaspoonful every hour, and afterward every two hours, until the fever began to subside, headache was re-

lieved, and free perspiration had appeared. This was about eight o'clock in the evening. Next morning, at nine o'clock, the child was playing out of doors. The bowels were constipated for four days, but with this exception there was not a sign left of any disturbance.

A severe case of typhoid fever, which occurred in his practice last summer, was treated with the same drug whenever there was a high temperature, with the effect of entirely breaking up the regularity of the morning and evening variations, and all through the third week of the disease keeping the heat below 101° .

In a case of perineal section for stricture, on the third day rigors set in, followed by the usual surgical fever, the pulse running up to 148, and temperature to 104° and a fraction. About seven o'clock in the evening the patient began taking the gelsemium, and at nine the next morning the pulse and temperature were nearly normal, the latter not reaching 100° . In a case of pleuro-pneumonia, between five o'clock in the evening and nine the next morning, the thermometer showed a reduction of the heat from 104.2° to 101.5° , due to the use of the same drug. In a case of scarlatina, between five o'clock in the evening and nine the next day, the temperature was reduced from 105° to 99.2° ; and during the whole disease, which lasted acutely only six days, the temperature never rose above 102° , except for a half day, when the gelsemium was stopped by mistake, then it rose to 103° , but was at once reduced to 101.8° by resuming the medicine.

For a child less than five years old, Dr. Gray usually prescribes tincture of gelsemium, twenty minims; bromide of potassium, twenty grains; water, four ounces; a teaspoonful to be taken every hour until fever begins to abate; then every two hours, until free perspiration is produced. For children from five to fourteen or fifteen, he gives in four ounces of water half a fluid drachm of the gelsemium and thirty grains of the bromide; for adults, a fluid drachm of the tincture, and a drachm of the bromide, to four ounces of water, with the same directions for taking.

The dose for a child is only about five-eighths of a drop, and the adult dose not two drops; and Dr. Gray thinks, as the full effects are obtained by these small frequent doses, the complaints that are made against the drug arise from too large doses. At all events, the effects above related are sufficient to claim for gelsemium the attention of all who wish to avail themselves of the best means of combating fever.

Lest some of the champions of bromide of potassium should say the above effects were due to that, instead of the gelsemium, he states that for some time he used the latter alone, with quite the same effect upon the temperature, and combined the two for the quieting effect of the salt, gelsemium not producing very marked results of that sort in such minute doses.

LAWSON ON THE THERAPEUTIC ACTION OF HYOSCYAMINE.—In the *Practitioner* for July, Dr. Robert Lawson, Assistant Medical Officer to the West Riding Lunatic Asylum, remarks that, in the fifth volume of the *West Riding Lunatic Asylum Medical Reports*, he published a series of observations on the physiological actions of the active principle of hyoscyamus. The effect on man of the administration of sufficient quantities of the drug

was shown to be the production of a subdued form of mania accompanied by almost complete paralysis of the voluntary muscles, and ending in quiet and refreshing sleep. The consideration of the character of the phenomena produced led to the hypothesis that, therapeutically, hyoscyamine might be useful in substituting for the extreme forms of excitement which accompany or result from many brain diseases, a quieter form of mania which, on disappearing in its turn, might leave the patient in a state of quiescence. In the present article he describes the effect produced by the drug in the treatment of recurrent, acute, and subacute mania, monomania of suspicion, and the excitement of senile dementia, setting aside till a future period the results of observations on the use of hyoscyamine in the epileptic status, the excitement of general paralysis, and other forms of cerebral disease. [Typical cases are given in illustration.]

One thing, he says, must be observed as characteristic of the use of hyoscyamine, that is, the potency and permanency of the action of individual doses. In these respects he does not think it is equalled by any other drug. In about fifteen minutes the most violent and excited patient can be thrown into a comparatively deep sleep by about one grain of the amorphous alkaloid, and on wakening from his his slumber almost invariably frees himself also from the delusions and hallucinations which have bewildered him; and he can adduce numerous instances in which this recovery, rapid as it has been in its accession, has also been thorough and enduring.

There is one class of cases of mania in which hyoscyamine is particularly useful. In the refractory wards of an asylum outbursts of excitement are constantly manifested which present more of the features of voluntary abandonment to angry passions than of pure insanity. Such patients are very aggressive, very loud in their denunciations, and very destructive of clothes and furniture. To such a patient a grain dose of hyoscyamine is a very ready and serviceable means of treatment. The violence and the alarming manifestations of muscular force which precede the administration of the medicine stand in very strong contrast with the helplessness, the absolute and conscious impotence, which follow shortly upon its exhibition. Many circumstances render such cases the most suitable ones for the use of the drug. Such patients are usually in robust health, have been eating well, and are not likely to suffer much from a temporary derangement of digestion, and none feel more keenly the inconvenience of being reduced to a state of helplessness. With patients suffering from acute or furious mania, however, the case is different. These not unfrequently are, when admitted, reduced to the last degree by the prolongation of extreme excitement, the loss of sleep, and the refusal of food. Their tongues and throats are generally dry, and the tube almost always requires to be resorted to for feeding purposes. In such cases, though hyoscyamine will produce a most certain and refreshing sleep, it will also by its physiological action increase the dryness of the throat, and thus both impede artificial feeding, and add to the constitutional disturbance, which, even in a moist state of the throat, the passing of the tube is apt to induce. But in numerous instances the use of hyoscyamine in outbursts of maniacal excitement has been productive, not only of great temporary benefit, but of highly satisfactory cures.

In epileptic excitement also the drug is productive of marked benefit.

In the treatment by hyoscyamine of acute, furious, or delirious mania, the drug possesses both great advantages and great disadvantages in such forms of derangement. The advantages are, the certainty of producing repose if a sufficiently large dose is administered, and the permanency of the effect produced, which is more marked after the employment of a single dose of hyoscyamine than after the isolated use of any other drug. The disadvantages are, that the dose required to combat extreme excitement may also be sufficient to produce such a physiological action on the heart and respiratory system as to cause danger to a frame wasted (as generally occurs in such cases) by prolonged fury, starvation, and loss of sleep. Also, the dryness of the throat following upon the use of the drug may interfere considerably with the success of forcible feeding, which forms so essential an element in the treatment of such cases. Combination with the tinctura pyrethri or some other equally powerful sialogogue may to some extent obviate this last disqualification. While mentioning the disadvantages associated with the administration of hyoscyamine, it is necessary to take note of the liability which patients only partially under the influence of the drug experience to the infliction of bruises. Before the physiological action of a full dose is completely established, and when it is passing off, the patient influenced by hallucinations of sight may rise, and while attempting to walk is liable, by the existence of partial motor paralysis and hypermetropia, to the infliction of bruises by contact with hard substances. This has to a certain extent been obviated by allowing a patient to sleep on a mattress placed on the floor. Dr. Lawson, however, has never seen any except the most trifling bruises produced, and certainly no contusions such as would almost certainly be inflicted by the amount of manual restraint necessary to meet the same excessive violence.

In chronic monomania of suspicion he has had very satisfactory results from the use of hyoscyamine. A large number of such cases result from alcoholism; and the delusions of suspicion remain as the chronic manifestations of the attack of *mania e potu*, which is generally found to have existed as the first appearance of mental derangement. In such cases the almost irremediable state of subdued suspicion is varied by exacerbations excited by the most trifling causes, sustained by hallucinations of all the special senses and characterised by extreme danger to the persons suspected by the patient. Not unfrequently such men lead lives of comparative indolence, inasmuch as the nature of their delusions frequently renders it unsafe to trust them with the implements required in any sort of labour. Being in addition well fed and compelled to take a fair amount of exercise they are generally sufficiently robust to enable them to bear well the temporary inconveniences of the hyoscyamine treatment.

With reference to the treatment of the excitement of senile dementia by hyoscyamine, it is only necessary to say that the benefit which has been long acknowledged as obtainable in that disorder from hyoscyamus itself naturally suggested the idea that the active principle might be still more useful. Consequently, the excitement of senile dementia was one of the first conditions in which Dr. Lawson employed the drug. The disadvantages, however, to which he has already referred in speaking of the treatment of

furious mania by large doses of hyoscyamine, apply equally to the use of the drug in senile excitement, and he has consequently found it advisable not to treat such cases with the active principle. In cases, however, which he has considered to be suitable for its administration, the arrest of the excitement has been very decided. In such cases he has given nutrient enemata from the commencement of the action of the drug, and for two or three of the following days.

No medicine capable of producing narcotism operates so quickly and with so much certainty, and none has such a decided capability of leading the mind from absorption in delusions and hallucinations through a milder physiological form of mania to a state of complete and, under favourable conditions, permanent quiescence. There is one form of disadvantage which arises not from the nature but from the mode of administration of the drug. If timid persons, instead of giving a full dose, say one grain, compromise matters by giving half a grain, the effect is that cerebral excitement without complete motor paralysis is produced and remains persistent through the whole period of the operation of the medicine. The following is the form in which hyoscyamine is administered:—Hyoscyamine, gr. j, Sp. Etheris, ℥viij, Alcoholis, ℥xxiv, Aq. font. ad 3j; M. ut fiat haustus. Dr. Lawson has not had occasion to use the drug hypodermically, and is not sure that the pungency of a concentrated form of this solution would not render a new formula necessary for subcutaneous use.

Dr. Lawson earnestly recommends hyoscyamine as *facile princeps* in the treatment of all cases of what may be called sthenic forms of mania, and especially in the aggressive outbursts of excitement which characterise life in a refractory ward, and in the treatment of chronic monomania of suspicion. He also suggests its use in some forms of disease regarding which observations cannot readily be made in a lunatic asylum. For instance, the constitutional effect on mucous membranes and the special effect on the urinary system suggest that hyoscyamine may be of service in gonorrhœa, and he has himself seen benefit produced by its administration in spasmodic stricture of the urethra. The dryness of the skin produced during the physiological action of the medicine suggested that it might be useful in colliquate sweatings.

EDWARDS ON THE TREATMENT OF NEUROSES DUE TO TOBACCO BY STRYCHNIA.—Dr. L. B. Edwards (*Virginia Medical Monthly*, quoted in the *Detroit Review of Medicine* for July), lays great stress on the use of strychnia in acute neuroses due to tobacco habit, especially cases marked by nervousness, muscular irritability, tremor, etc., the result of smoking. He mentions a case of acute shaking tremor of the hands, due to tobacco, in which he injected one-nineteenth of a grain of strychnia hypodermically. Within fifteen or twenty minutes thereafter the muscular control of the hand, on the side in which the injection was made, was nearly perfect, and the general nervousness was perceptibly modified.

STUART ON THE ACTION OF BICARBONATE OF POTASH.—In a letter in the *Students' Journal*, July 28, 1876, Mr. J. A. Erskine Stuart says: 'Bicarbonate of potash is stated in our various textbooks to be antacid, antilithic, antarthritic, diuretic, and alterative. But, besides these, it possesses a very peculiar property, which I have seen mentioned

in no work on *materia medica*. If taken in a large dose, as a drachm, it produces anæsthesia in different parts of the body. One day lately I took about a drachm, and a few minutes afterwards I felt a peculiar numbness all over the cheeks and round the lips. This numbness lasts for a considerable time. It has also been observed in the limbs and trunk. This peculiar action may account in some cases for the immediate relief which this drug gives in acute rheumatism, the diuretic, antacid, and anæsthetic properties all combining to assist in the relief from pain.

W. DOUGLAS HEMMING.

SMITH ON THE TREATMENT OF BURNS.—Dr. Q. C. Smith extols, in the *Pacific Medical and Surgical Journal*, the following dressing as the best for burns.

Mix subnitrate of bismuth with pure honey until it forms a thick paste. Spread the mixture plentifully over the burned surface and the parts near adjoining as soon as possible after the burn occurs. Then cover the parts thickly with cotton-wool wadding and bind closely. In the majority of cases this dressing should not be removed for three or five days, when the parts should be immersed in water until the dressing is very soft and easily removed. The same dressing should be immediately renewed.

TOXICOLOGY.

MARMÉ ON THE POISONOUS ACTION OF ARSENIOUS ACID AND OF ARSENIC ACID.—In the *Nachrichten von der Königl. Gesellschaft der Wissenschaften*, Göttingen, nos. 22, 23, 24, 1875, is an account of some comparative experiments by M. Marmé, on the poisonous action of arsenious acid and of arsenic acid. Doses of the two acids containing equal amounts of arsenic (or with a little more in the arsenic acid dose), and diluted with water, were given to animals as similar as possible in age, weight, etc., being introduced directly into the circulation, or into the stomach, or the connective tissue. The symptoms are detailed. Without exception, the doses of arsenious acid proved more rapidly fatal than those of arsenic acid. The acid salts behaved similarly to the free acids. The fact is against Munck and Leyden's view, that arsenious acid in the blood is oxidised to arsenic acid, and that only as such it dissolves the blood-corpuscles, and causes fattening of various tissues and organs. The authors think it probable that when arsenic acid is introduced into the blood it is reduced to arsenious acid, and therefore its action appears more slowly. They further describe some experiments on the use of toxic substances to counteract poisoning by arsenic acid.

HOLLEY ON POISONING BY OIL OF RED CEDAR.—In the *Detroit Review of Medicine and Pharmacy* for July, Dr. D. C. Holley, of Vernon, Michigan, relates a case of poisoning by oil of red cedar (*Oleum Juniperi Virginianæ*). Mrs. W., wife of a farmer, supposing herself *enceinte*, swallowed half an ounce of oil of red cedar about ten o'clock at night, for the purpose of producing abortion. A few minutes after going to bed, she told her husband she felt very strangely; her eyes to her felt as if bursting from their sockets, and her head as if enclosed with an iron band. A slight attempt at emesis ensued, and a very little of the oil was vomited; twitching

of the muscles was observed, and in a few moments more a most violent convulsion came on, and all further consciousness on her part for the next twelve hours was lost. Convulsion succeeded convulsion in rapid succession, until within two hours she had eleven. Dr. Holley was summoned about one and a-half hours after the poison was taken. He gave immediately an emetic of sulphate of zinc and ipecacuanha. Free vomiting quickly ensued, and a portion of the oil came up with the contents of the stomach, as evidenced by its characteristic odour and the oil floating on the surface of the matter ejected. There was only a slight abatement, however, in the rapidity of the recurrence of the convulsions—none whatever in their violence. As soon as the action of the emetic subsided, he administered chloral hydrate and bromide of potassium, each twenty grains, in cinnamon water. Sinapisms were applied to the nucha, feet, and epigastrium.

The convulsions now ceased and did not return; the chloral and bromide were continued, however, once in two hours, in doses of ten grains each for the remainder of the night. She lay apparently in a deep comatose sleep until about nine o'clock the next day, when she awoke to perfect consciousness with no recollection of what had occurred since swallowing the oil. She made a good recovery. So far as the pregnancy was concerned, it probably did not exist in the case at all, as there was no evidence of abortion or of any uterine action.

RECENT PAPERS.

On Phosphorus Poisoning. By M. Bucquoy. (*La France Médicale*, July 12.)

OBSTETRICS AND GYNÆCOLOGY.

GUÉRIN ON THE DIFFERENTIAL DIAGNOSIS BETWEEN MORBID PELVIC CONGESTION, PHYSIOLOGICAL CONGESTION, AND METRITIS.—In lectures published in *L'Union Médicale* (summarised in *Paris Médical*, May 18, 1876), M. Guérin indicates the symptoms of the above various normal or pathological states, and the means for distinguishing them. The physiological congestion of menstruation has for its certain characteristic its regularity and its duration, which varies from two to three days. In pathological congestion the hæmorrhage comes at the end of fifteen days, or three weeks; it shows itself at irregular intervals, and lasts from two to fifteen days, three weeks, or even more. When the catamenial congestion is the cause of the morbid congestion, the sanguineous discharge which accompanies it assumes at first characteristics of irregularity and of duration. At length the phenomena peculiar to one or other of these congestions, increase in the size of the uterus, sensations of cramp, of weight, etc., disappear with the sanguineous discharge in menstruation, whilst they remain in pathological congestion. On the other hand, we distinguish morbid congestion from metritis by the following characters: the leucorrhœa which accompanies congestion consists of a transparent, opaline mucous, while it is yellowish, muco-purulent, or purulent in inflammation. More than this, in congestion the patient experiences a sensation of a heavy body in the pelvis which tends to come out, and of dragging in the groins; the vaginal walls present a

peculiar œdematous sensation. It is very rare that the uterine neck becomes affected with ulceration, and the uterus still present some mobility. In metritis the patients do not experience this sensation of a heavy body trying to escape; the uterus is less mobile, more fixed. The pains are more acute, radiating towards the anal region; the uterus has a firmer consistence, and ulcerations of the neck are frequent. Uterine fluxion is only a degree of congestion; it does not exist as a separate morbid entity, and therefore there is no reason for giving the diagnosis between the two affections.

W. DOUGLAS HEMMING.

HUMPHREYS AND FENNER ON A CASE OF SEPTUM OF THE VAGINA.—Drs. Humphreys and Fenner, of Seguin, Texas, report to the *American Supplement of The Obstetrical Journal of Great Britain and Ireland*, for May, 1866, a case of a complete septum of the vagina. The patient, a German lady, aged nineteen, stout and plump, was taken in labour on January 11. They saw her four days afterwards. She was greatly fatigued, but not exhausted. The head rested above the brim, was in good position, the occiput to the left, and was freely movable. The os tincae, dilated to about half the full size, covered the right parietal bone. They changed her position, and presently found the os covering the left parietal bone, and it was some little time before they noticed that there were two vaginae and two mouths to the womb, with the head resting centrally and heavily against the septum.

The two passages were exactly similar in every respect, and it was clearly impossible to deliver the child through either. They decided to cut the septum, although they could recollect no authority or precedent for it. The head was pushed back, two fingers passed between it and the septum, a curved probe-pointed bistoury, carefully guarded, was used, and the septum divided about an inch. A few pains brought the head against the septum, when another inch was cut, and so on until the septum was cut through and the child expelled by the natural efforts. The hæmorrhage from the cut was only an ounce or two, and the woman recovered promptly and without a bad symptom. The child, apparently dead, was revived after long efforts.

The septum was placed antero-posteriorly, commencing at the arch of the os pubis, passing down to the fourchette with a free edge, flush with the labia minora, and attached to the perinæum, the walls of the vagina, and the lips of the os uteri, holding the latter nearly in contact. It was about $1\frac{3}{4}$ inches wide. Its free border in front was almost a feather-edge. Higher up it was of uniform thickness, of about $1\frac{1}{2}$ lines in the centre, growing thicker each way to its junction with the vaginal walls. Under the knife it had a fibrous feel, as if composed of sewing-threads. The part between the lips of the uterus was spread out a half-inch wide, either naturally or by the long-continued pressure of the head.

RECENT PAPERS.

- Albuminuria and Puerperal Eclampsia. By Dr. Angus Macdonald. (*Obstetrical Journal*, July, 1876.)
Two Cases of a Pessary Impacted in the Vagina for more than a Year. By Dr. George Buchanan. (*Ibid.*)
Albuminuria with Eclampsia produced by Pressure on the Abdominal Vessels. By Dr. Hünicken. (*Berliner Klinische Wochenschrift*, July 3.)

- Warm Water Injections in Uterine Hæmorrhage. By Dr. R. Windelband. (*Deutsche Medicinische Wochenschrift*, June 17.)
On Internal Hæmorrhagic Metritis. By Dr. F. Weber. (*Allgemeine Medizin. Central-Zeitung*, June 3, 7 and 10.)
The Action of Chloral Hydrate in Normal Labour. By Dr. P. Müller. (*Berliner Klinische Wochenschrift*, June 19.)
A Case of Calcified Foetus after Rupture of a rudimentary Gravid Left Cornu of the Uterus. By Dr. H. Chiari. (*Wiener Medizinische Wochenschrift*, June 10.)
Excoriations of the Os and Cervix Uteri, with some Observations on their Diagnosis, Causation and Treatment. By Dr Hutton. (*Dublin Journal of Medical Science*, June, 1876.)
On the Use of Hydrate of Chloral in Labour. By M. H. Debangue. (*Lyon Medical*, June 4.)
On a Case of Triple Pregnancy. By M. Leriche. (*Lyon Medical*, July 9.)
Syphilitic Lesions of the Placenta. By G. B. Ercolani. (*Archives de Tocologie*, July, 1876.)
On Various Disturbances of Menstruation. By Madame Rossetti. (*Le Mouvement Medical*, July 29.)

REPORTS OF FOREIGN SOCIETIES.

ACADEMY OF MEDICINE IN PARIS.

June 13. *Liqueurs*.—M. Decaisne read a memoir on the liqueurs Grand Chartreuse and Eau de Mélisse des Carmés, in reference to alcoholism. He came to the conclusion that the plants which enter into the composition of these liqueurs were identical with those used in the manufacture of absinthe. They all contain essential oils of a more or less dangerous character. Thus in equal doses, the effects of these three liqueurs are identical and produced the same variety of alcoholism. These affirmations were not, however, supported by any proofs, and did not provoke any discussion.

June 20. *Sphirophore*.—M. Woillez read a memoir on the sphirophore, an apparatus intended for the treatment of asphyxia, especially that of drowning persons and new-born children. It is composed of a cylinder of sheet iron closed on one side and open on the other, and large enough to contain the body of the person asphyxiated, who is put into it up to the head, which remains outside. A diaphragm afterwards closes the opening round the neck. An air-bellows placed outside the case, but communicating with it by a tube, is set in motion by a lever, of which the lowering produces the aspiration of the air confined round the body; the raising of the lever drives back into the case the air which had been abstracted from it. If a dead body were experimented on, which M. Woillez had done, every time the lever of the air-pump was lowered, the air was seen to enter the chest, of which the walls rose as in life, whilst everything resumed its place when the lever was raised. Each movement introduced from half a litre to a litre of air into the lung. It is easy from this experiment to deduce the utility of the sphirophore in the treatment of the asphyxia of drowned persons, and of new-born infants. The use of the instrument is perfectly safe; it never produces the slightest pulmonary lesion.—M. Depaul affirmed that for new-born infants at least, the means usually employed, notably mouth-to-mouth insufflation, or insufflation by the help of the laryngeal sound are amply sufficient. Insufflation sometimes induced positive resurrection.

June 27. *Seat of the Murmur in Pregnancy*.—M.

Depaul brought to mind the origin of this discussion. M. Glénard, junior (of Lyons), localised the murmur of pregnancy in the epigastric artery. M. Bouillaud especially placed it in the external iliac artery. M. Depaul summarised the different theories formulated on the mechanism of this murmur from the moment of its discovery by M. Kergaradec up to the present time, compression of the veins of the minor pelvis, uterine arteries, communication with the placental veins, etc. The theory which placed the seat of the murmur of pregnancy in the epigastric artery was not new. According to a communication addressed to M. Depaul by M. Stolz, there exists a paper by Kiwisch dating from 1849, in which all the facts and all the ideas contained in M. Glénard's memoir are to be found. However, the latter, according to a letter addressed to M. Depaul, renounced the theory of the seat of the murmur in the epigastric artery and located it in an anastomotic branch between the internal iliac and the ovarian arteries—a large artery to which he proposed to give the name of puerperal artery. M. Depaul did not deny the possibility of a *bruit de souffle* in the epigastric artery, but it could not be a *souffle* comparable to that of pregnancy, which, according to M. Depaul, was seated only in the uterine arteries, which were largely developed during the course of pregnancy. Neither the theory of the epigastric murmur, nor that of M. Bouillaud, which placed it in the large iliac arteries, explained how this murmur might be heard from the end of the third month of pregnancy, when the uterus had not yet passed beyond the brim of the pelvis and could not consequently compress the epigastric artery nor the internal iliac. Besides, this murmur was not only heard in pregnant women, but several hours, and even several days after delivery. Finally, Dr. Rapin, of Lausanne, had shown in a decisive manner that the murmur was seated in the uterus. If the finger were introduced into the neck of the uterus of a pregnant woman, all accoucheurs knew that strong pulsations like those of a large artery were felt on the internal surface of the organ. If this uterine artery were compressed, at the moment the stethoscope was applied to the abdomen, the murmur disappeared. M. Depaul regretted not to be able up to the present time to furnish absolute proof of his theory by direct auscultation of the uterus exposed by the Cæsarean operation.

July 8.—M. Depaul, continuing the reading of his paper, combatted M. Bouillaud's theory, attributing the murmur to the compression of the iliac artery. There were radical differences between the murmur of pregnancy and that obtained by compressing an artery—the crural, for instance. In this, there was rather a pulsation with a murmur, whilst the murmur of pregnancy was simple, exempt from all pulsation, very different from the murmur with pulsation found where there was no pregnancy, in cases of uterine tumour compressing the arteries. It was necessary in pregnant women to distinguish the true uterine murmur from the compression-murmurs. The murmur of pregnancy was characterised by the absence of pulsation; it was almost constantly intermittent, and only appeared continuous when the heart-beats of the mother reached or exceeded 120. It began to be heard in the course of the third month; it was very superficial. It apparently and really passed under the ear, since it was produced in the uterine wall, which was only separated from the ear by the abdominal wall. The murmur of

the external iliac was deeper. The uterine murmur was more diffused than the iliac murmur; it was perceptible throughout the whole extent of the abdominal wall in contact with the uterine wall; it disappeared when the uterine wall was compressed by the stethoscope. The bruit of the uterine murmur was due to the enlargement of the uterine vessels during pregnancy, whence arose a larger size of those vessels than that of the trunks whence they spring. The arterial blood thus passed from narrower to wider canals; hence arose the murmur.

Causes of the Fermentation of Urine.—M. Pasteur read a memoir in conjunction with M. Joubert, on the causes of the fermentation of urine. Alkaline fermentation of the urine or transformation of the urea into carbonate of ammonia; in the first instance attributed to the action of the vesical mucus transforming itself into a ferment under the influence of the oxygen in the air; was referred by M. Pasteur in 1862 to a minute microscopic vegetable growth. Recently, M. Musculus, of Strasburg, announced that in cases of catarrh of the bladder he had obtained from urine a substance precipitated by alcohol, soluble in water, transforming urea into carbonate of ammonia, as diastase transformed starch into dextrine and glycose. M. Pasteur believed that this ferment, far from being a direct derivative of the vesical mucus, was a product of the minute microscopic vegetable growth pointed out by him. It would be the only example of an organic ferment giving birth to a soluble substance, capable of determining the same fermentation as that engendered by the microscopic creature. It was all the more important to prevent this microphyte from penetrating into the bladder and to destroy it there. Carbolic acid had no action on it; solution of boracic acid seemed to arrest its development.

ACADEMY OF SCIENCES.

May 22. *Chloral*.—M. Oré reported a case of traumatic tetanus, cured by intravenous injection of chloral. The injections were made from June 23 up to July 26, 1875, and the total quantity of chloral injected was 56 grammes. M. Alarco, of Lima, who obtained the cure, considered himself to be the first person who had ever treated tetanus in this way. M. Oré pointed out that his own cases occurred much before this.

Thermo-cautery.—M. Guérard, jun., having claimed the priority of the thermo-cautery presented by M. Paquelin, M. Gosselin pointed out the differences between this instrument and the one proposed by M. Guérard.

May 29. *Muscular Contraction*.—MM. Morat and Toussaint presented a memoir on the variations of the electric condition of the muscles in voluntary contraction and in artificial tetanus, studied by the aid of the galvanoscopic *patte*. A first result of these experiments was that the induced contraction, brought on by voluntary action, depended on the suddenness only and not on the strength or the duration of the contraction. With regard to tetanus they had observed the following facts. Tetanus artificially brought on by interrupted currents, comprised two types, separated by a number of intermediate conditions. In one of these types, tetanus made up of short shocks and relatively few shocks, the oscillations of the electric condition were still sudden and of a certain amplitude.

In the second type (tetanus made up of long and numerous shocks) the muscular current remained in almost constant negative variety. The oscillations of the electric state of the muscle, being very little accentuated, did not provoke more reaction in the galvanoscopic *pilule*. It was only when the negative variation established itself; that is to say, at the very moment when the inductor tetanus began that the nerve of the induced *pilule* could be excited. Applied to the study of voluntary contraction, these data proved that the permanency of the negative variation indicated by the galvanometer was only exclusively due to the inertia of the apparatus, but represented at least partially a real phenomenon. There was every reason to believe that a very mobile apparatus would give analogous indications.

Tactile Sensation.—A note on tactile sensation by M. L. Lalanne was read. Imitating Lissajous' method of determining the duration of visual sensation, he endeavoured, in concert with MM. Ch. Martin and Aug. Le Pileur, to discover with what rapidity an object in contact with the skin must be turned, for the repeated frictions to give a continuous sensation. The results of thirty-three experiments were as follows. 1. Continuity is never manifested for less than ten rotations to the second. The duration of the tactile sensation observed did not then surpass one-tenth of a second, and in a certain number of experiments was less. 2. The least duration observed was from one twenty-fourth to one twenty-fifth of a second. 3. This minimum of duration varied with the individuals, and according to the parts of the body. A personal equation, analogous to that of which the astronomers are obliged to keep account, gave a variable quantity between one-tenth and one-fourteenth of a second for the persistence of the sensation, according to the observers; contact having occurred on the dorsal surface of the second articulation of the index finger. On the external part of the arm, between the deltoid and the elbow-joint, the duration, according to one of the observers, was rather more than one-thirteenth of a second, whilst according to another, it descended almost to one-twentieth of a second. The course of these researches had been interrupted, and the dispersion of the three co-workers who undertook them prevented their being resumed.

The Action of Digitalis.—MM. V. Feltz and E. Ritter communicated the researches they had made after M. Bouillaud's indications, on the subject of the action of digitalis in comparison with that of the biliary salts, on the pulse, arterial tension, respiration and temperature. A. By the biliary salts and the infusion of digitalis (one part in 100) administered in non-poisonous doses, the temperature is lowered about one degree for the two substances; the arterial tension falls from two to three centimètres of mercury for the biliary salts, and from six to seven centimètres for digitalis; respiration becomes irregular in both cases without any grand departure from the normal condition; the pulse is lowered under the influence of the two poisons. The only observable difference is that with digitalis the extreme descent lasts a very short time, and is followed by an acceleration which may last for twenty-four hours; with the biliary salts, the diminution of the number of pulsations lasts a longer time, but is not followed by abnormal quickness. Animals placed under the influence of biliary salts lose less weight than those which are digitalised. In the former the diminution does not exceed

300 grammes, and reaches more than 100 grammes in the second. After section of the pneumogastric and the sympathetic nerves the pulse is still influenced by biliary salts and digitalis in the first case, and by no means in the second; the temperature and the respiration continue to act in the same way. B. For the poisonous doses, the cases of biliary poisoning in which death does not occur for some hours, can only be compared with those in which digitalis is administered in large doses. In animals which die by biliary poisoning, the temperature and the pulse decline regularly until death occurs; the morphological changes in the blood and the hæmorrhages which are the result may thus be seen. In dogs digitalised to the extent of four cubic centimètres of infusion to every kilogramme of their weight, the temperature falls progressively and very regularly from seven to eight degrees; the pulsations diminish after more or less strong oscillations to the half of their normal amount. The arterial tension declines, and falls as low as three centimètres of the mercury. Sometimes sudden death takes place in cases of digitalisation. This always supervenes at a time when the pulse is very rapid and very feeble, without any warning of the death-struggle from the diminution of the arterial tension and the temperature. No chemical or morphological changes in the blood are ever observed. C. As the pulse does not fall in digitalised animals after the section of the pneumogastric and sympathetic nerves, as is the case in animals poisoned by biliary salts; as the blood does not show any change comparable to that pointed out and demonstrated in poisoning by bile; the action on the muscular tissue, whether curarised or not, not being the same in both cases, it may be concluded that the effect of digitalis is much more powerful over the nervous system than over the blood or the muscular tissue, as it occurs with the biliary salts. The nature of the death resulting likewise tends to establish this difference, for, in all the necropsies of animals killed by digitalis, the head was found in a state of relaxation, containing as nearly as possible the same quantity of blood in each ventricle. The heart was never found in a state of tetanic contraction, which is the rule in biliary poisoning; and, whenever MM. Feltz and Ritter had the opportunity of examining the heart shortly after death, they were able to prove by the electric pile that the cardiac muscle had not lost its contractility.

June 12. *Glycæmia.*—M. A. Bernard continued his communications on glycæmia. To demonstrate the presence of sugar in the blood, the albuminous matters must first be disengaged; after which all the physical, chemical, and organoleptic methods will show the sugar. In general it will suffice to boil the blood with an equal quantity of sulphate of soda, to subsequently obtain the characteristic reaction with Fehling's liquid. The titrated solution is used.

Treatment of Sympathetic Ophthalmia.—M. Boucheron submitted to the judgment of the Academy a memoir on the section of the ciliary nerves and the optic nerve at the back of the eye, substituted for the enucleation of the eyeball, in the treatment of sympathetic ophthalmia.

Sugar in the Blood.—M. Claude Bernard demonstrates that the sugar of the blood becomes rapidly destroyed after its extraction from the vessels. Acetic acid is the substance which has the power of retarding this decomposition. The disappearance

of the sugar after death takes place in a gradual manner, which is so much the more rapid as the proportions become smaller. It also results from numerous experiments, that, in the living animal, the richness of the blood in sugar is subject to frequent oscillations.

The Plague.—M. Tholozan forwarded a note on the plague in Mesopotamia, in 1876. He showed that in the preceding epidemics, the plague spread from place to place, from the autumn to the time of the great heats. He mentioned quarantine as the best way of preventing the spread of plague germs.

The Movements of the Brain.—M. Salathé sent a paper on the graphic study of the movements of the brain. He had obtained the following results. 1. The oscillations of the liquid in relation to the respiration, weak and sometimes *nil* in calm respiration, become very marked in efforts, exclamations, etc. 2. The respiratory oscillations observed simultaneously at the cranium and the spine are synchronous. 3. Artificial respiration reverses the order of the oscillations, the liquid then rising on inspiration, lowering at expiration. 4. Oscillations depending on the cardiac systole, which may be partly or completely masked in the case of increased respiration, give a tracing resembling that of the pulse. 5. Position exercises a great influence over the intracranial pressure, which indicates considerable changes of the level of the liquid, which rises notably when the tail of the animal is raised, and falls when the contrary is effected. 6. Anæsthetics may modify the phenomena in two ways, either by suddenly putting a stop to the respiration, and consequently to the oscillations which depend on it, whether by suppressing the latter, and regulating the respiration.

Preserved Meats.—M. J. Pagliari submitted several specimens of meat preserved by a ferruginous solution, together with a bottle of the liquid used for preserving it.

July 3. *The Blood in Anæmia.*—M. Vulpian, in the name of M. Hayem, presented a memoir on the anatomical characteristics of blood in anæmic subjects. The size of the corpuscles is modified in a remarkable manner. Many are found which are much larger, but much thinner than in the normal condition, whilst the major part are smaller than the smallest normal corpuscles. The shape is more or less changed, especially in the medium and small corpuscles. The colour is deeper than in the normal condition.

Anæsthesia by Intervenuous Injection of Chloral.—M. Linhart, a surgeon in the Austrian navy, communicated a case of anæsthesia by intravenous injection of chloral in order to reduce a fracture of the humerus. Seven grammes of chloral were injected in fourteen minutes. Anæsthesia lasted for half an hour without sickness or any accident whatsoever.

REVIEWS.

A Treatise on the Diseases of the Nervous System. By WILLIAM A. HAMMOND, M.D., Professor of Diseases of the Mind and Nervous System in the Medical Department of the University of the City of New York, etc. With one hundred and nine Illustrations. Sixth Edition, Re-written, Enlarged, and Improved. New York: D. Appleton and Co. 1876.

It is most gratifying to find so earnest and practical a physician as Dr. Hammond giving to us his large experience, gained by a life's labour, in this comprehensive volume on the diseases of the nervous system; and we should be wanting in courtesy did we fail to congratulate him upon the good and solid work he has accomplished.

If it claims pre-eminence in any one respect, it does so in the fact that it is essentially practical; and in passing from page to page one recognises at once the outcome of thoughtful and honest work. Dr. Hammond has not been led away by the mere researches even of the greatest physiologists, but he has compared their assertions with his clinical and pathological data, and expressed his opinions based upon a matured experience. Neither does he fail to give credit where it is due for originality of investigation—his pages are embellished with references to the most learned neurologists of the present century. In all probability Dr. Hammond is of opinion that minutiae of detail even to repetition is essential for a clear statement of his views—and although in this we cannot altogether disagree with him, yet perhaps we speak advisedly when we suggest that in the future it would be well rather to pare down in order to admit new material than to increase the bulk of the present volume.

It is extremely interesting to observe the implicit faith which Dr. Hammond has in the effect of remedial agents for the curative treatment of nervous disorders. We say nothing more than this—that we hope other practitioners are equally successful. The writer, however, has found from an extensive experience, that with a carefully regulated diet, rest, soothing influences, and general hygienic measures to promote due elimination of waste products, many of Dr. Hammond's vaunted specifics can be advantageously dispensed with.

It is to be regretted that Dr. Hammond, in his clinique, fails generally to give the age of the patient; and it is also an omission of great importance that the diathesis and temperament appear to be ignored, and in very few cases do we find the condition of the urine noted.

For the complete study of nervous disorders there are four points of prime practical importance to be considered, namely, age, diathesis or constitution, and the nature of secretions and excretions, but particularly that of the urine. This will often enable us to come to a more definite prognosis than the use of the æsthesiometer or the ophthalmoscope.

There are many temporary pareses due to thromboses of either brain or cord, coexistent with copious albuminuria, which pass off in direct ratio as the albumen disappears. Dr. Hammond does not seem to have noted this. Such a condition applies equally to the psychical as it does to the physical part of our organisation.

The chief points which neurologists have now-a-days to study are those which refer more immediately to degenerative changes of the connective tissue of nerve-matter. That this comes to be a question of nutrition is clear, yet it must be understood that the nutritive processes are functionally altered from the non-elimination of waste products, rather than from (as many observers would have us believe) arterial change. But it must be apparent that the cause produces an effect equally and probably simultaneously upon the vascular and upon the nervous systems. Chronic nervous diseases are

more due in the first place to the condition of the blood than to its supply.

Dr. Hammond first discusses cerebral congestion, cerebral anæmia, and cerebral hæmorrhage. He divides congestion into active and passive; and he recognises six varieties, namely, the apoplectic, the paralytic, the convulsive, the soporific, the maniacal, and the aphasic. Concerning passive cerebral congestion, our experience is not quite in accord with Dr. Hammond's, for the signs and symptoms which he lays down as indicative rather incline one to the opinion that the cases described are due to defective nutrition, impoverished blood, and vaso-motor deficiency, and that capillary thrombosis is of much more frequent occurrence in association with miliary aneurisms than with what Dr. Hammond would have us to understand as mere passive congestion.

When we have passive engorgement of cerebral veins and sinuses from cardiac dilatation, for instance, we have not, as a rule, even functional derangement of either motor or psychic centres.

The chapter on cerebral hæmorrhage is not arranged with that regularity and definiteness which would cause its meaning to be easily grasped by the general reader. Upon first going over it, we thought it not to be compared with the other articles, but upon second observation we found that the matter, although somewhat discursive, was complete in its way. It is true that the signs of hæmorrhage into the anterior lobe are negative rather than positive, yet some more notice ought to have been taken of this condition. It would also have been as interesting as it is important to have some physiological explanation of the objective and subjective signs produced by definite gross lesions; also the signs of hæmorrhage into the upper or lower, or inner or outer, part of the pons Varolii might have been well discussed, and the same remark applies to the crura.

Of the existence of paralysis on the same side as the brain lesion, Dr. Hammond perhaps wisely says little. He rests satisfied with Longet's assertion, that it is explained by the fact that the decussation of the anterior columns of the cord is imperfect. However this may be, Dr. Brown-Séquard's theory of inhibition is certainly the most feasible. For our part, we believe that such cases, if they do occur (and it is hard to doubt the authority of some good observers), are very rare. From over 1,000 cases of paralysis, and from 473 *post mortem* examinations of brain-lesions, we have never yet been able to verify the statement.

Now and again we hear of extensive hæmorrhage into one lateral half of the brain with paralysis of the same side, and perfect freedom of the opposite. We are so far sceptical on the point as to disbelieve that such a condition ever existed.

Dr. Hammond agrees with Dr. Flint in saying that there is no especial apoplectic constitution; but we cannot assent to this, for the truly apoplectic has a physique and a diathesis as strongly marked as that of the consumptive.

On the treatment of cerebral hæmorrhage, Dr. Hammond expresses the same opinion as most authors, and is in accord with the experience of the present day. But we are surprised to find that, although he recommends the use of the continuous current to the head in cases of cerebral congestion, he does not refer to this form of treatment in the cerebral depression consequent upon cerebral hæmorrhage. We know that in many cases it has in our own hands

saved the lives of patients where progressive hæmorrhage has been going on for days, and apparently profound coma with stertorous breathing has set in; and where there has been complete insensibility and absence of any automatic movement. In these, the application of the continuous current to the lower limbs has roused the patients from unconsciousness to positive volitional sensibility, and by the administration of nourishment death has been averted. We could, if space permitted, quote many such cases.

In the symptomatology of cerebral meningeal hæmorrhage, we find want of definition. For instance, it is stated that it does not differ from severe forms of cerebral hæmorrhage. In seventeen cases of idiopathic meningeal hæmorrhage which have come under our own observation, it was specially noted that there was comparatively little absence of cutaneous and muscular sensibility; that there was more or less rigid extension of the lower limbs, that the upper were often in co-ordinate movement; that there were tonic convulsive seizures of groups of voluntary muscles sometimes acting laterally, at others bilaterally; and what was of the most profound physiological interest, was not so much the presence of reflex and automatic movement, but the doubt which existed as to how far these movements were automatic, or in a measure voluntary. The psychology of meningeal hæmorrhage is of the greatest moment.

Dr. Hammond does not give us any new information concerning the diagnosis of plugging of the cerebral sinuses. In several of our own cases, we are bound to admit we found no essential diagnostic sign. In two, where the circulation was completely obstructed by growths of the torcular Herophili during life, nothing could be noted except vertigo, blowing noises in the ears, aberrant vision, and ischæmia papillaris.

In several cases where cerebral venous thrombosis was diagnosed, we have found large and frequent doses of liquor ammoniæ to be of essential service.

Concerning the very excellent article on cerebral softening, Dr. Hammond holds different views from Dr. Hughlings Jackson. The former looks upon it as a distinct pathological condition, which may exist independent of the vascular supply.

The various views upon the vexed and inexplicable question of aphasia, from an early date, are fully entered into, and especially the localisation of the faculty of language. Dr. Hammond does not believe in the doctrines of Broca's school, neither does he admit that the organ of language is restricted to the left hemisphere, for he says it is situated in both hemispheres, and in that part which is nourished by the middle cerebral arteries. It is clear that he draws his conclusions strangely enough rather from statistics [which in our opinion often furnish doubtful data] than from his own experience.

As in paralysis existing on the same side as the brain-lesion, so in aphasia, very rarely indeed do we find the right hemisphere to be the seat of lesion.

We do not think that any true physiological construction can be put upon traumatic injuries to the encephalon, unless the *post mortem* examination be conducted with the greatest care, and the microscope be brought into requisition.

It has not been our good fortune to meet with more than one case of aphasia, with well-marked left hemiplegia, out of 127; and in this case it was found upon examination that in addition to the remains of an old clot in the right corpus striatum there was

softening of the second and third frontal convolutions of the *left* hemisphere. Broca's theory is in a great measure supported by the physiological researches of Dr. Ferrier. Dr. Jackson's views tend to support this doctrine. Certainly our own pathological and clinical experience leads us to the most definite views upon this point.

Dr. Jackson's definition of the term aphasia ought to be generally adopted as indicating merely the want of voluntary power of using words to express ideas where mind (memory, perception, and receptivity) are not involved. If such definition, however, were adopted, it would reduce those cases which now come under the term aphasia to a minimum. All who have had clinical experience of this class of perverted function must have learnt that, whenever the speech-centre is involved, the balance of mind has at some time or other been disturbed. It matters not whether, according to Ferrier, the centre for co-ordinate articulate movements of speech act bilaterally, and exist in each hemisphere. The degree of mental derangement undoubtedly depends upon the precise location of the lesion and brain-involvement—let that be by inhibition through commissural fibres, or by defective vascular supply. It is interesting to find that, the more the study of brain-function advances, so much the more is it proved that the integrity of the brain as a whole is dependent in direct ratio not only with the parts immediately diseased, but indirectly by contiguity with anatomical relationship. We are more and more convinced that aphasia in the general acceptance of the term is not explained by mere ataxy of muscles of articulation.

Dr. Hammond states that he has purposely omitted giving an account of epidemic cerebro-spinal meningitis. We think this an unfortunate omission. And it would have been well if he had expressed his views concerning a disease which is becoming more frequent in this country, namely basic idiopathic cerebro-spinal meningitis of an acute nature. We have brought several such cases before the notice of the profession, but the precise etiology of this condition is obscure.

We think Dr. Hammond lays too little stress upon blood-states in reference to both acute and chronic disease of membranes of the brain and spinal cord; and the cases quoted by him appear to have their origin manifestly apparent in the gouty, syphilitic, rheumatic, or tubercular diathesis. We speak from clinical evidence, and consider them to arise from a subacute inflammation (if the term may be used) by a metastasis from the skin, joints, or connective tissue. It must not be forgotten that dissipation, alcoholism, deprivation of the necessities of life, and exposure to vicissitudes of temperature, are frequently exciting causes.

The more common forms of insanity are vividly portrayed. The description of the varieties of paralysis due to pathological changes in the several columns and grey matter of the spinal cord is a more complete one than we obtain in any other work in the English language, and the symptomatology, significance, physiology, and pathology of these cases appear to us to be far more explicit and interesting than any other part of the volume. The views of Charcot and Vulpian are expressed in direct conformity with their most recent and important investigations.

Dr. Hammond believes with Muller, Barth, and Lockhart Clarke that in pseudo-hypertrophic paralysis the lesion begins in the spinal cord, and that the

muscular change is secondary. In two cases which have come under our observation, no lesion was found in the spinal cord, thus bearing out the views of Charcot that the muscular lesion is the essential one. It is as yet an open question, which cannot be decided without further investigation.

In reference to progressive labio-glosso-laryngeal or bulbar paralysis, Dr. Hammond's views are extremely definite, so much so, in fact, that few observers can claim an equal share of precise information. We know that the medulla may be invaded by an interstitial inflammatory change, either from the cord or from the brain; and under these circumstances it does not, according to Dr. Hammond, come under the term. Nevertheless, such cases present all the characteristic features bilaterally of this disease.

Its invasion first affects the due pronunciation of lingual articulatory processes, then the labials; difficulty of swallowing and profuse secretion of the salivary glands follow. This, from our point of view, is a bulbar progressive paralysis, and in our experience those cases are rare where the anatomical lesion clearly shows that the motor (not trophic) roots of the seventh, eighth, and ninth nerves are alone involved. We will not attempt to disprove the existence of an entity which has been so clearly defined by Trousseau, Duchenne, Wachsmuth, and other learned observers, but from a clinical point of view we cannot accept a subjective theory in the place of objective phenomena; and what Dr. Hammond states to be mere weakness of the extremities, from the patient not being able to take sufficient food, we believe to be an actual invasion of the antero-lateral columns by inflammatory products. We quite agree with Dr. Hammond that some of the cases quoted from other authors by him are as far removed from true bulbar paralysis in signs and symptoms as a palsy from disease of the anterior columns of the cord is from loco-motor ataxia. Very little is said about the treatment of this affection, but upon this point we must be dogmatic. We know that the onward progress of the malady is certainly checked by paying strict attention (before the disease has advanced to that stage where lingual movements are stopped, and swallowing is performed with difficulty) to keeping the tongue, lips, and pharyngeal muscles at perfect rest, and to feeding the patient regularly through the nostrils. In one case which came under our care, by carefully pursuing this mode of procedure, the patient gained over two stone in weight, and for years followed his occupation until we lost sight of him.

Progressive locomotor ataxia is fully considered, and its anatomical seat is referred to the posterior root zones of the spinal cord. Dr. Hammond takes an isolated case as proof of this, and in one or two others it has been found that, where the columns of Goll have alone been diseased, the signs of locomotor ataxia have been absent. For our own part, we are willing to accept what we have found to be pathologically true, that the posterior columns, including the posterior root zones are principally and generally involved, but in advanced stages the inflammatory change has extended to the anterior horns of grey matter, and even to the anterior columns. Space will not permit us to comment upon Dr. Hammond's notice of muscular sense and the seat of co-ordinating power, which he gives in this chapter.

We find at page 772 an article on multiple cerebral

sclerosis. It seems to be thrown in between hysteria, epilepsy, and paralysis agitans, where it is out of place. There is a fairly interesting and true account of this most definite disease. We are indebted to Dr. Moxon, in 'Guy's Hospital Reports for 1875,' for the first published description of it in this country. Such a condition though has been known for years—in fact, according to our author, it was recognised thirty-five years ago by Cruveilhier and Carswell. From our own experience, we should say that there is no disease of the nervous system which denotes by clinical evidence its pathological significance with so much truth as this. The nystagmus, staccato speech, and jactatory motion of the head, with tremor and ataxy of movement somewhat as in sclerosis of the posterior columns, all tend to give to it a definite place in nerve nomenclature.

We can scarcely understand Dr. Hammond's reasons for differing from Charcot and other writers concerning the clinical signs of paralysis agitans; and we are disposed to think that here he is wrong. He states indirectly that the disease occurs in younger people, is somewhat curable, and not dependent on organic change. We have now under our care cases of paralysis agitans, cerebral sclerosis, and multiple cerebro-spinal sclerosis; the first is a disease of advanced life, the second of middle age, and the third usually occurs between twenty-five and forty. Dr. Buzzard, at the Clinical Society last year, brought forward two cases—the one of multiple cerebro-spinal sclerosis, and another of paralysis agitans, and drew a graphic contrast between the clinical features of the two conditions which were well known, and ought never to be confounded. Dr. Hammond says that paralysis agitans rarely terminates fatally. What he means by this we are at a loss to understand, as we never knew a case to recover. In one of our cases, where death occurred, the tremor finally ceased because the body and limbs were drawn forward in a state of perfect rigidity, so that the patient was moved about like a solid block. The microscopic examination of the brain and cord was made by Mr. W. H. Kesteven, and we give it in detail. At the commencement of the decussation of the anterior pyramids, the following appearances were noted. The nerve-cells were atrophied, undergoing granular pigmentary degeneration, and that form of degeneration called fuscous, in which the nucleus and nucleolus take the carmine staining brilliantly, but the rest of the cells remain of a granular yellow appearance. There was cortical sclerosis of the posterior and right lateral columns. There were also specimens of miliary and colloid degeneration. As we ascended in the examination of the medulla, the nerve-cells of the olivary bodies were found to be atrophied. The fibres of the auditory nerves were almost destroyed by miliary degeneration, which, with colloid change, had invaded the lower portion of the nucleus of the fifth nerve and the fibrous matter surrounding the olivary bodies. The cerebellum and brain all gave evidence of what Dr. Kesteven at one time designated miliary sclerosis, but in reference to which he now uses the more appropriate term 'miliary degeneration.' The appearances presented by the spinal cord were similar to those described in the medulla and brain. The cells in the anterior horns were particularly the seats of the various forms of fuscous degenerations.

Dr. Hammond tells us all that is known in relation to hydrophobia, and he seems to be doubtful whether it is a blood or nerve disease; and he gives the

same opinion in reference to tetanus. We consider both conditions to be due to blood-change. He recommends the use of nitrate of silver or cauterisation to the bitten surface. Our practice is to apply freely the strongest solution of ammonia.

The question of epilepsy is well studied and elaborated, and we are glad to find that Dr. Hammond endorses the sound psycho-physiological views of our distinguished neurologist, Dr. Hughlings Jackson as to what is and what is not epilepsy. The doctrine which was usually taught, that epilepsy, to be epilepsy, must be attended with unconsciousness, ought to be discarded. Yet Dr. Jackson's broad statements require much consideration, for, if we agree with him absolutely, all aborted functions are epileptic. We have long held the same views as Dr. Hammond relative to the blood-supply to the brain during epilepsy, and agree that a congestive form is equally as common as that induced by anæmia.

The chapters on chorea, athetosis, hysteria, ecstasy, and hystero-epilepsy are well worth perusal, and the book concludes with some practical remarks on toxic diseases of the nervous system.

There can be no doubt that this valuable work ought to be studied by every practitioner of medicine.

THOMAS S. DOWSE, M.D.

A Manual of Operative Surgery on the Dead Body. By THOMAS SMITH, Surgeon and Lecturer on Anatomy at St. Bartholomew's Hospital. A new edition, re-edited by W. J. WALSHAM, Demonstrator of Anatomy and Operative Surgery at St. Bartholomew's Hospital. London: Longmans and Co. 1876.

English surgery when compared with others, more particularly with French, is not rich in manuals of this kind. The first edition of this book was one of the best we possess, on account of the clearness with which it was written and the correctness of its details, as far as they went. The second edition, the preparation of which has been chiefly undertaken by Mr. Walsham, has not only been well revised, but has also been made more valuable by more frequent references to anatomy.

It has always appeared to us that, as the performance of many operations on the dead body is of but little use (compare, for instance, tracheotomy on the adult corpse with the same operation on the living child), the chief value of a course of operative surgery on the dead body (and equally so of a manual on the subject) lies in the opportunities which it gives to students of getting a good knowledge of surgical anatomy, and also of learning a number of those little practical points and helpful aids which can never be learnt so well as now, and which are too often left unlearned till the call comes to operate on the living subject.

We have already alluded to the attention Mr. Walsham has paid in this edition to anatomical details. Thus, in the chapter on ligature of the arteries, some useful diagrams on the collateral circulation, and on the relation of some of the chief veins to the arteries, will be found. On this account, especially in addition to its general excellence, this manual will be found useful by those preparing for the second examination for the Fellowship of the Royal College of Surgeons, under the new regulations.

It only remains to us to point out a few passages

which appear to us either quite needless or actual blemishes.

In the chapter on tenotomy, the directions for dividing the tendo Achillis from the dorsal surface forwards might well have been omitted; and the same might be said with regard to the paragraph on division of the tibial tendons at their insertions into the tarsus, such a step being one of great difficulty in a child, and often dangerous in an adult.

In the chapter on the genito-urinary organs, the following most unpractical directions are given for securing the cannula after puncturing the bladder by the rectum. 'It should be secured by fastening the end of the cannula to the margin of the anus . . . by means of sutures, or by tying it to the hair around this part' (p. 96).

Farther on, where amputation at the wrist-joint is described, it is much to be regretted that the editors should have contented themselves by transferring to their pages the most unintelligible account which is to be found in the manual by Mr. J. Bell, where, in amputating at the wrist-joint, it is recommended to begin at the junction of the outer and middle thirds of the arm (*sic*). Fortunately, the accompanying illustrations will enable the reader to puzzle out the steps of the real operation.

With all due deference to the opinions of the editors, we would recommend the student not to be satisfied with the three lines with which amputation at the elbow-joint is dismissed.

There are a few other passages which we had marked for comment, if our space had admitted it. On the whole, this book may be thoroughly relied upon both by the student in operating upon the dead, and the practitioner upon the living body.

RECENT FRENCH BOOKS.

Published by Adrien Delahaye.

- Expériences sur la force élastique des bandes et des tubes en caoutchouc par la méthode des poids, par M. le docteur Houzé de l'Aulnoit, professeur à l'École de médecine, chirurgien de l'hôpital Sainte-Croix. Lille, 1875, in-8 de 41 pages. Prix : 1 fr. 50.
- Discussion sur l'albuminurie et son traitement hydriatique, par Boulomié. 1 vol. in-8 de 48 pages. Prix : 1 fr. 25.
- Du choix d'une station thermale, par le docteur A. Comandré, médecin consultant aux eaux de Cauterets.
- Essai sur l'esthiomène de la région vulvo-anales, par le docteur Albert Faquet. Prix : 2 fr.
- Essai sur les contractures du col de la vessie, par le docteur C. Sebeaux. Prix : 2 fr.
- Goutte et rhumatisme, par le docteur Patezon, médecin inspecteur des eaux de Vittel. Prix : 1 fr.
- Les causes de la gravelle et de la pierre, étudiées à Contrexéville pendant neuf années de pratique médicale, par le docteur Debout, médecin inspecteur des eaux de Contrexéville. Prix : 3 fr.
- De la trépanation dans les abcès des os et dans l'ostéite à forme névralgique, par le docteur Simon Perret, ancien interne des hôpitaux de Lyon. In-8 de 88 pages. Prix : 2 fr.
- Du traitement chirurgical des hémorroïdes et en particulier de la dilatation, par Jean-Valère Cristofari. Paris, 1876.
- Traité de l'impuissance et de la stérilité chez l'homme et chez la femme, comprenant l'exposition des moyens recommandés pour y remédier, par le docteur Félix Roubaud. Troisième édition. Paris, 1876, in-8 de 804 pages. Prix : 8 fr.
- Étude expérimentale et clinique sur le thorax des pleurétiques et sur la pleurotomie, par le docteur J.-J. Peyrot, aide-d'anatomie à la Faculté de médecine de Paris. Paris, 1876, in-8 de 153 pages. Prix : 3 fr.
- Procédés pratiques pour l'analyse des urines, des dépôts et des calculs urinaires, par E. Delefosse, docteur en médecine. Paris, 1876, in 8 de 74 pages avec 68 figures. Prix : 2 fr. 50.

Contributions à l'étude des convulsions et paralysies liées aux méningo-encéphalites fronto-pariétales, par Louis Landouzy, docteur en médecine de la Faculté de Paris. Paris, 1876, in-8 de 248 pages avec 6 figures. Prix : 5 fr.

Du mode d'action des eaux sulfureuses, par le docteur Sénac-Lagrange, ancien interne des hôpitaux de Paris, médecin consultant des eaux de Cauterets. In-8 de 98 pages. Prix : 2 fr. 50.

Contribution à l'étude des kystes hydatiques compriment la moelle épinière, par le docteur P.-E. Désiré Bellement. In-8 de 60 pages et 2 planches. Prix : 3 fr.

Traité des tumeurs du sein, par Léon Labbé, chirurgien de l'hôpital de la Pitié et Paul Coyne, lauréat des hôpitaux. Un volume in-8 de 560 pages avec 2 planches en couleur et 32 figures. Prix : 12 fr.

Étude sur la transmission des sons à travers les liquides endopleurétiques de différentes natures, par le docteur Bacelli (de Rome), suivie de quelques considérations sur les signes physiques de la pleurésie, par le docteur Noël Guéneau de Mussy, médecin de l'Hôtel-Dieu, membre de l'Académie de Médecine. Paris, 1876.

Recherches sur les causes de l'épilepsie et des convulsions épileptiformes, par le docteur Durand Hugon (de Coltines). Prix : 2 fr.

De la fluxion ou congestion pulmonaire simple chez les enfants, par le docteur Hirne. Prix : 2 fr.

Published by G. Masson.

Recherches de chimie médicale sur l'hématine, (étude médico-légale), par le docteur Paul Cazeneuve, in-8 de 78 pages avec 2 planches. Prix : 3 fr.

Du traitement des ulcérations chroniques, (syphilis, scrofule, etc.), et des plaies atoniques par le sulfure de carbone, par le docteur Paul Guillaumet, in-8 de 63 pages. Prix : 2 fr.

Leçons cliniques sur les maladies de la peau professées à l'hôpital Saint-Louis, par M. le docteur E. Guibout, médecin de l'hôpital Saint-Louis, 1 volume in-8 de 700 pages. Prix : 8 fr.

La vie et ses attributs dans leurs rapports avec la philosophie et la médecine, par M. E. Bouchut, médecin de l'hôpital des Enfants-Malades, professeur agrégé de la Faculté de médecine, 2e édition, revue et corrigée. 1 vol. in-18 Jésus de 450 pages. Prix : 4 fr. 50.

Published by P. Asselin.

De la bronchite pseudo-membraneuse chronique, par le docteur Lucas-Championnière. In-8 avec une planche. Prix : 2 fr. 50.

De la médication marine, ses indications, ses contre-indications, ses avantages dans le traitement de la glycosurie par le docteur Hédouin, membre titulaire de la Société d'hydrologie médicale de Paris. Vol. in-18. Prix : 3 fr. 50.

Published by H. Lauweryns.

Eléments de pathologie et de clinique chirurgicales; par le docteur L. Moignac, ancien interne du hôpitaux. Tome I. 1 vol. in-18 Jésus de 760 pages, avec 85 figures intercalées dans le texte. Prix de l'ouvrage : 16 fr.

Published by J.-B. Baillière and Sons.

Expériences sur la force élastique des bandes et des tubes en caoutchouc par la méthode des poids, par M. le docteur Houzé de l'Aulnoit. Lille, 1875. In-8 de 41 pages. Prix : 1 fr. 50.

Du Merveilleux : Des Miracles et des Pèlerinages au point de vue médical, par le docteur L. Grellety. In-8 de 96 pages. Prix : 2 fr. 50.

MISCELLANY.

TIME'S WHIRLIGIG.—About the year 1832 an obscure Italian medical student, living in a poor lodging in the Rue de la Harpe, Paris, occupied his spare time by translating the works of Voltaire, of J. J. Rousseau, and of the surgeon Veaupeau. These philosophical and medical studies have borne fruit, and the unknown student of thirty years ago has returned to the scene of his early labours as General Cialdini, Ambassador from the kingdom of Italy to the French Republic.

PROFESSOR BARDELEBEN has been appointed Rector Magnificus, and Professor Virchow Dean of the Medical Faculty, of the University of Berlin. Professor Thiersch has been appointed Rector Magnificus of the University of Leipzig.

THE CATHOLIC UNIVERSITIES seem to have been a failure in France. According to an official account published by Government, about a hundred pupils have been registered in law. The number of medical students is limited to a few dozen, and there are only eight in science. However, the Catholics are collecting funds with unabated spirit, and 3,000,000 francs are said to be in hand for opening a Law Academy at Marseilles.

CONTAGIOUS PUERPERAL FEVER.—In the American supplement to the *Obstetrical Journal of Great Britain and Ireland*, Dr. Wells relates a case where a physician travelled 250 miles to attend the funeral of a lady who had died from puerperal fever, and arrived after the body had been placed in the coffin. He remained thirty hours in the house, but did not touch the corpse. On returning home, he attended, three days afterwards, a lying-in case, who caught the puerperal fever and died.

THE RIBERI PRIZE.—The Turin Academy of Medicine proposes the following subject for the prize of 20,000 francs (800*l.*) founded by Riberi. The pathology of the female genital system. The principal conditions are the following. 1. Complete treatises and monographs are admitted to competition. 2. Works may be either in print or manuscript. They may be written in Latin, Italian, or French. 3. The printed works must have been published in the course of the years 1874, 1875, 1876, and must be in duplicate. 4. The works of the candidates must be addressed to the Royal Academy of Medicine of Turin, before December 31, 1876.

CAMBRIDGE UNIVERSITY.—During the Academical year 1875-6, which terminated in June last, the University has been more prosperous than in any previous year, judging from the numbers entered and the degrees conferred. The number of students matriculated was 699, as against 672 in the previous year. The number of degrees conferred was 823, as against 787. The number of degrees in each faculty—Divinity, Law, Physic, Music, and Arts—was as follows:—Doctors in Divinity, 4; Doctors of Law, 3; Doctors in Medicine, 5; Doctors of Music, 2; Masters of Arts, 282; Masters of Law, 14; Bachelor in Divinity, 1; Bachelors in Medicine, 6; Bachelors of Arts, 473; Bachelors of Law, 25; Bachelors in Music, 6; and two graduates from other Universities were incorporated. Of the Bachelors of Arts and Law, 246 graduated with honours. The increase in the University may be estimated by comparing the above figures with the number of matriculations and degrees ten years ago, which was as follows:—Matriculated, 540. Degrees conferred, 647—viz., D.D., 3; LL.D., 10; M.D., 1; M.A., 249; Masters of Law, 5; Master in Surgery, 1; Bachelors of Arts, 241; Bachelors in Divinity, 5; Bachelors of Law, 30; Bachelors of Medicine, 2. In this total of 647 are included six honorary degrees.

THE UNIVERSITY LIBRARIES IN GERMANY.—The *Illustrirter Kalender* publishes the following statistics of the contents of the university libraries in Germany. The library of the Berlin University contains 115,000 printed volumes and 40,000 charts. The University of Bonn contains 180,000 volumes, several hundred manuscripts, and a large collection of maps. The University of Breslau has 340,000 volumes of books and 2,900 manuscripts. The Erlangen University has 110,000 printed volumes and 1,900 manuscripts, besides 50,000 treatises, 17,000 autograph letters, and a collection of designs and engravings. The Freiburg University contains 250,000 printed volumes and 500 manuscripts. The Giessen University has 150,000 printed volumes and 1,268 manuscripts; that of Göttingen, 400,000 printed volumes and 5,000 manuscripts; that of Greifswald, 70,000 volumes; and that of Halle, 100,000

volumes and 1,000 manuscripts. The University of Heidelberg has 300,000 volumes, 70,000 treatises, 3,000 manuscripts, 1,000 charts, a collection of maps, and another of engravings. The University of Jena has 100,000 volumes, and that of Kiel 150,000 volumes and several hundred manuscripts. The University of Königsberg has 220,000 volumes, in addition to about 50,000 double copies of books for the purpose of exchange. The University of Leipsic contains 350,000 printed volumes and 4,000 manuscripts. The University of Marburg has 120,000 printed volumes, but very few manuscripts. The University of Munich contains 283,500 volumes, 17,500 manuscripts, 3,600 portraits, and 3,200 medals. The University of Rostock has about 140,000 volumes; that of Tübingen, 280,000 volumes, 60,000 treatises, and 2,000 manuscripts; and that of Würzburg more than 200,000 volumes and 2,000 manuscripts. The library of the Strasburg University is said to contain 300,000 volumes, of which 5,400 relate to the history of Alsace, and about 500 manuscripts. The *Illustrirter Kalender* adds that the library of the Vienna University contains 211,220 volumes and 83 manuscripts, and that the library of the Basle University contains 100,000 printed volumes, 4,000 manuscripts, and 180 charts.

THE MEDICAL SCHOOL AT CONSTANTINOPLE.—This Medical School, placed under the direction of Dr. Bernhard, a German, and ten other able professors, all from Vienna, was at first established at Galata-Serai, an old Government Palace in Pera, but was rusticated to make room for the Lyceum, and removed to Kumbur-hané, near the Sweet Waters of Europe. The German instructors have now been superseded by ignorant native teachers, and the anatomical and other museums have suffered from frequent migrations. The surgeons and physicians required even for the naval and military services are still in a great measure supplied by foreign schools, and what ideas of the profession are entertained may be inferred from the fact that merely for lancing the Sultan's boil, an operation for which the meanest phlebotomist would be competent, Omer Pasha, the Court doctor, received a remuneration of 1,000*l.*, with some jewelry, and the rank of a General of Division. The continuous and conscientious habit of study and devotion to medical science does not recommend itself to the Turkish student, and the population is in the hands of quacks and wise-women sticking to the old superstitious practices of sorcery and ignorant empiricism.

THE SALE OF POISONS.—It would appear, from a lecture delivered before the Medical Society of London, by Dr. R. Farquharson, that the strength of several of the so-called 'mother tinctures' of the homœopaths is far in advance of that of the solutions sold by the allopathic chemists. It is well to notice this fact, as no restriction is placed on the sale of these dangerous preparations, so that they may be freely purchased with homicidal or suicidal intent. Thus, for instance, in the solution of arsenicum, of the first potency, arsenious acid was found to the extent of one grain in 102 minims of water; while the corresponding solution in the British Pharmacopœia contains only one grain of arsenious acid to 120 minims of water. Again, an analysis of the 'first potency' of mercurius gave one grain of bichloride of mercury (corrosive sublimate) in about two drachms of water, or four times the strength of the British Pharmacopœia solution of perchloride of mercury. The strength of the tinctures of aconite and belladonna was found also to be much greater than that of the recognised medical preparations. The analyses were performed by Mr. Brownen, the able analytical chemist of Messrs. Savory and Moore. Among the dangers to be anticipated by the unrestricted sale of such poisons as the above, besides the one already pointed out, the lecturer adverted to the 'rash confidence engendered in the minds of old-fashioned homœopaths regarding the weakness of the drugs, and the freedom with which they may be used. A mistake of this kind occurring with aconite would probably not happen to the same patient a second time.'

THE number of denizens of the Southport Aquarium has been lately increased by the birth of no less than 1,000 sea-horses in one of the tanks.

AN association to be known as the American Gynaecological Society was organised in New York on June 3. The officers for the first year are as follows: President, Fordyce Barker; vice-presidents, W. L. Atlee, W. H. Byford; secretary, J. R. Chadwick; treasurer, P. F. Munde; council, J. M. Sims, W. Goodell, T. Parvin, G. H. Lyman. The first meeting will be held in New York, on September 13, 1876.

IT is well-known that the population of France is increasing at the lowest rate in Europe, but that the rate is rapidly diminishing will be, perhaps, surprising to many. That, however, is the fact, as appears from some statistics which have been published by the *Economiste Française*. From the calculations of births over deaths it appears that taking periods of ten years since 1800, the rate of increase has been as follows: 1801-10, the population was doubling in 168 years; 1811-20, in 121 years; 1821-30, in 119 years; 1831-40, in 168 years; in 1841-50, in 168 years; 1851-60, in 228 years; 1861-70, in 265 years; 1871-75, in 1,380 years. The last number is of course unusually great, on account of the transfer of the Rhine Provinces to Germany. This gives 334 years for 1801-75, while Germany requires only 98 years to double its population; Austria, 62; Denmark, 73; the United Kingdom, 63; Sweden, 89; and Norway, 51.

UNIVERSITY OF LONDON: PRELIMINARY SCIENTIFIC (M.B.) EXAMINATION.—The following candidates passed the recent examination: *First Division*.—John Mitford Atkinson, London Hospital; James Balls, King's College; George Frederic Barnes, Melcombe Regis School; Frederic Thomas Bayes, Guy's Hospital; Edward Hargrave Booth, private tuition; Francis Bowe, St. Bartholomew's Hospital; George Coulson Robins Bull, Epsom College; William Fitton Chadwick, Owens College; William Chisholm, B.A. Sydney, University College; Ernest Clarke, St. Bartholomew's Hospital; Walter James Clarke, Queen's College, Birmingham; Daniel Colquhoun, Charing Cross Hospital; Augustus Henry Cook, University College; Robert Hammond Cotton, B.A., Owens College; Arthur Cutfield, Epsom College; Andrew William Dallmeyer, University College; Norman Dalton, King's College; Arthur George Dawson, Owens College; Edwin Deane, St. Thomas's Hospital; Henry Edmonds, private study; Joseph Faulkner, St. Bartholomew's Hospital; George Ernest Fooks, St. Bartholomew's Hospital; Joseph Tregelles Fox, London Hospital; William Fream, Royal College of Science, Dublin; Henry Thomas Groom, St. Bartholomew's Hospital; Robert Nightingale Hartley, private study; Henry Nelson Holberton, St. Thomas's Hospital; Richard Honeyburne, Liverpool Royal Infirmary School of Medicine; Robert Nesbit Hormazdji, St. Mary's Hospital; William Evans Hoyle, Owens College and Christ's Church, Oxford; David Alexander King, St. Bartholomew's Hospital; Thomas Kirsopp, St. Bartholomew's Hospital; Leopold Larmuth, Owens College; Charles Pardey Lukis, St. Bartholomew's Hospital; William Norton Macartney, Allesley Park College; Dennis M'Donnell, King's College; Robert Maguire, Owens College; Herbert Meyrick Nelson Milton, St. Thomas's Hospital; Arthur Newsholme, St. Thomas's Hospital; John Williams Nicholson, private tuition; James Norie, University College; Arthur Northcott, University College; Louis Coltman Parkes, University College; James Hugh Paul, private study; Arthur Edward Permewan, University College; Reginald Pratt, University College; Beaven Neave Rake, Guy's Hospital; Mark Feetham Sayer, University College; Thomas Ball Silcock, private study; Richard Sisley, St. George's Hospital; Robert Henry Scanes Spicer, private study; William Ainley Sykes, St. Bartholomew's Hospital; Frederick Rufenacht Walters, St. Thomas's

Hospital; Robert Blake Yardley, University College. *Second Division*.—William Coode Adams, University College; Theodore Frederick Pennington Adolphus, King's College; D. E. Anderson, University College; Anundrao Atmaram, University College; Gilbert Harry Barling, St. Bartholomew's Hospital; John Irvine Boswell, Guy's Hospital; James Lodwick Burchell, London Hospital; Dudley Wilmot Buxton, University College; Wayland Charles Chaffey, St. Bartholomew's Hospital; David Collingwood, Liverpool Royal Infirmary School of Medicine; John Davidson, King's College; Thomas Vincent Dickenson, St. George's Hospital and private study; John Arthur Diggle, Owens College and private study; Arthur William Dingley, University College; Denis William Donovan, University College; Howard Howse Dummere, St. George's Hospital; Edwin Hurry Fenwick, London Hospital; William Eckett Fielden, Guy's Hospital; William Henry Russell Forsbrook, Westminster Hospital; James Harper, University College and St. Bartholomew's Hospital; Walter Robert Thomas Hawkins, London Hospital; Edward James Hodges, private study; William More Hope, University College; Donald Templeton Hoskyn, University College; Thomas Isherwood, Owens College and private study; Edward Cocks Johnston, Queen's College, Birmingham; George Ryding Marsh, Guy's Hospital; Henry Maudsley, Giggleswick Grammar School; Robert Arthur Milligan, Guy's Hospital; Frederic Harvey Norvill, King's College; Edward Potts, Queen's College, Birmingham; James Havelock Alexander Rhodes, Liverpool Royal Infirmary School of Medicine; Henry Smith, St. Bartholomew's Hospital; Bernard Joseph Snell, B.A., New College; Julian Stephens, University College and private study; Thomas George Stonham, private study; Samuel Walter Sutton, St. Thomas's Hospital; Ernest Hamilton Wagstaff, King's College; Robert Spence Walton, University College; Christopher James Watkins, University College, and private study; Walter Wickham, St. Bartholomew's Hospital; Walter Treiving Williams, London Hospital; Louis Edmund Wood, St. Thomas Hospital.

The following passed the first B.Sc. Examination: *First Division*.—Arthur Black, private study; Thomas Bolton, University College; Ernest Henry Cook, Royal College of Science, Dublin; Robert Hammond Cotton, B.A., Owens College; Arthur Cutfield, Epsom College; Andrew William Dallmeyer, University College; William Fisher, B.A., private study; William Fream, Royal College of Science, Dublin; Thomas Gough, private study; William Henry Higgin, Owens College; Edward Hopkinson, Owens College; William Evans Hoyle, Owens College and Christ Church, Oxford; George William Mackie, B.A., private study; Henry Major, B.A., private study; Henry Forster Morley, B.A., University College; Michael Francis O'Reilly, St. Joseph's College, Clapham; John Arthur Owen, private study; James Hugh Paul, private study; John Marsden Raby, B.A., Owens College; Hermann Ludwig Theodor Sack, B.A., private study; Rajani Kanta Sen, Edinburgh University; George Severs, private study; John Shirley, private study; Thomas Ball Silcock, private study; George Thomas Smith, private study; Julian Stephens, University College and private study; Thomas Ebenezer Vasey, private study; William Leonard Wills, Owen College; James Thomas Wright, private study; Robert Blake Yardley, University College. *Second Division*.—Anundrao Atmaram, University College; Bolinarayan Borrah, University College; Walter Kenneth Griffin, University College; Edward James Hodges, private study; Thomas Isherwood, Owens College and private study; Miles Knowles, private study; Leopold Larmuth, Owens College; Walter Palmer, University College; James Runciman, private study; Bernard Joseph Snell, B.A., New College; John Trubert, St. Joseph's College, Clapham; Horace William Turner, University School, Hastings, and private study; Henry Ullyett, private study; James Beaumont Wohlmann, B.A., private study.

The London Medical Record.

Authors of Papers, Theses, &c., will assist in the preparation of summaries by our reporters, by forwarding separate copies of their works.

CHARCOT AND GOMBAULT ON THE ALTERATIONS IN THE LIVER FOLLOWING LIGATION OF THE BILE-DUCT.

MM. Charcot and Gombault (*Archives de Physiologie*, May and June, 1876), have endeavoured to work out more completely the details of this process, to which already much has been contributed by the researches and writings of Cornil, Leyden, Mayer, and Wickham Legg. The animals selected for observation were guinea-pigs, and the observations were seven in number. Five animals died between the fifth and twelfth days after the operation, the sixth was killed on the tenth day and the seventh on the twenty-third day. The course of the bile to the intestine was in no case re-established; the consecutive peritonitis was limited, and the general peritoneal surface presented neither redness nor false membranes. The animals during life showed no special symptoms; they rapidly became thin, lost their appetites and died; they never were icteric; and the urine never gave the reaction of bile with the nitric acid test. The liver in every case was considerably enlarged; its colour was pale yellowish, and nutmeg-like, the centre of the lobule being yellow and translucent, the periphery slightly red: its consistence was increased, hard and resistant; there was no appearance of granulations.

The bile-apparatus outside the liver was dilated, its walls thickened and opaque. On microscopic examination, its connective tissue was found infiltrated with leucocytes. At the hilus, the connective tissue was in a similar condition; the usual adipose cells had disappeared. The bile in the gall-bladder was thick, and mixed with much mucus and masses of epithelium. In one case, where the bile was examined immediately after the animal was killed, by section of the medulla, it was found to contain a number of moving vibriones. In the liver itself, the large bile-ducts were greatly dilated, exceeding the diameter of the accompanying vein, and lined by large cylindrical epithelium; their cavities were generally free except in the case of the smallest, which were sometimes blocked by solid concretions of bile-pigment. Their walls were confounded with the connective tissue of the portal canals, which had become embryonic, without being much increased in quantity. The accessory bile-ducts were also enlarged; and this increase was due both to dilatation of their lumina and augmentation in the height of their epithelium.

The changes in the blood-vessels, which seemed of secondary importance, varied very much, the vein being sometimes dilated and filled with clot in which leucocytes were very numerous; at other times the epithelioid lining was evidently proliferating, but the

other coats were normal. There was nothing to notice in the arteries and lymphatics. The interlobular fissures and spaces presented changes varying according to the stage of advancement. At first, under a low power, the area of the spaces was simply enlarged, and their angles were prolonged more than usually towards the fissures; later, the fissures themselves had disappeared, and were replaced by bands of newly formed tissue, causing the lobular structure to be well marked, each lobule being surrounded on all sides and separated from its neighbours. Still later, the newly formed tissue had extended at the expense of the glandular substance, until it almost reached the central veins of the lobules. With higher powers, the canaliculi of the spaces were found dilated, often empty, sometimes containing a little biliary calculus, and presenting on their walls a lining epithelium like that of the larger ducts. As the spaces and fissures became larger so the number of the canaliculi increased until they presented the appearance of a network with irregular meshes, and capable of being distinguished as forming three zones, one of which was usually absent in the fissures. Those in the central zone were large, and few, occupying the neighbourhood of the vein, and usually absent in the fissures; in a second zone of more numerous but smaller canaliculi than the preceding, the canaliculi ran at right angles to the rows of hepatic cells; and, lastly, there was a third zone of very short canaliculi branching off at right angles from the last and running parallel to the direction of the rows of hepatic cells, with which, in some places, they seemed to be continuous. The contents of these canals varied; sometimes they were completely filled with epithelium; sometimes the epithelium formed an irregular investment of the inner surface, and then all the intermediaries between the small cubic epithelium of the fine interlobular canaliculi and the cylindrical epithelium of the larger canals could be observed; sometimes the canaliculi contained bile-pigment. The development of the interlobular connective tissue seemed to follow step by step the development of the canaliculi; embryonic and infiltrated with lymphatic elements when the lesion was but little advanced, it progressed towards complete organisation as this proceeded. The hepatic lobules underwent at first only a modification of size proportional to the enlargement of the spaces, except that the radiating vessels contained only white corpuscles, the red blood-corpuscles being entirely absent. As the lesion advanced, the lobule underwent important changes, not by compression, but by absorption of the hepatic cells, the new formation following the rows of cells. The precise manner in which the hepatic cells disappeared was not perfectly determined. The protoplasm seemed to diminish in quantity without any apparent change in its character—a sort of simple atrophy; fatty degeneration was only observed exceptionally. Occasionally, either in the neighbourhood of one of the microscopic abscesses, which were scattered through the liver or in the neighbourhood of small, dense, yellow patches, which seemed caused by the plugging of a canaliculus and the exudation of bile, a sort of vitreous degeneration of the cells was observed, the protoplasm of the cell becoming clear, homogeneous, slightly yellow, and resisting the action of all colouring agents.

The authors dissent from the the conclusion of Dr. Wickham Legg, that the phenomena are due to

a propagation of traumatic irritation from the part ligatured along the ducts, because this view ignores the influence of the retention of bile, and because, in one of Dr. Legg's cases, the left branch being alone tied, the traumatic irritation should have propagated itself in all directions, and should have affected the right lobe as much as the left, but the necropsy revealed lesions of the left lobe only; and, lastly, because in two other observations of the same author after ligature, the course of the bile was re-established, and in these ligature alone was shown to be powerless to determine the cirrhosis. The retention of bile, according to the authors, causes, first, and most manifestly, dilatation of the canals; and, secondly, proliferation of their epithelioid lining; this last is due probably, not to the simple chemical influence of the bile, but to properties acquired by it in the changes which it undergoes during its stay in the dilated receptacles, *dépropos* of which they refer to their observation of the presence of vibrones in one case. The increase in the number of the canaliculi is believed by them to be due to a transformation of the intralobular canaliculi, because they tend to substitute themselves for the rows of hepatic cells, and thus occupy the positions of those biliary capillaries described by Eberth and by Hering. Sometimes the transition from hepatic cell-row to biliary duct is very gradual, the normal hepatic cell diminishing gradually in volume, then flattening itself while it retains a certain quantity of its granular protoplasm, to be finally replaced by a little cell identical in appearance with the epithelium of the canaliculi. Moreover, in other places the intralobular canaliculi dilate and anastomose with the canaliculi of the spaces; the circumference of the lobule appears riddled with lacunæ which, on the side of the interlobular space, are limited by little cells, with large nuclei like those found in the neighbouring bile-ducts, while those which approach the lobule are surrounded by true hepatic cells, only these cells are flattened and their protoplasm tends to disappear. It is possible to follow a longitudinal section of a true biliary canaliculus, and to observe directly the continuity of its cavity with such a lacuna.

As to the origin of the epithelium of the newly formed canaliculi, the authors advance two hypotheses. Either it is formed by extension of the irritative process which led to epithelial proliferation in the larger ducts, or it is formed from the hepatic cells themselves, but they consider on this point further observations are required. Ligature of the bile duct is not the only experimental procedure which can determine cirrhosis of the liver, for in 1872 M. Solowief showed that ligature of the vena portæ produces an analogous result. The authors hope to show in a future paper that there are, anatomically, three easily recognisable types of cirrhosis of the liver: 1. Multilobular cirrhosis, common granular liver, in which rings of fibrous tissue surround and compress the lobules; 2. Unilobular cirrhosis, or hypertrophic cirrhosis, in which the connective tissue does not compress, but systematically destroy, the hepatic cells following the direction of their rows, and proceeding from the circumference to the centre; 3. Pericellular sclerosis, affecting primarily the intralobular connective tissue, as in the syphilitic hepatitis of new-born children. The notes of a case of partial obstruction of the common bile-duct by a gall-stone, with the microscopic appearances of the liver presenting analogous changes to those above described, and a reference to a case published by Dr. Bea'e,

are advanced to show that this pathological condition does occur in the human subject.

ROBERT SAUNDBY, M.B.

MORSELLI ON THE PATHOLOGY OF THE CERVICAL SYMPATHETIC NERVE.

Dr. Morselli, of Florence, commences an article in *Lo Sperimentale* for August, by remarking that up to the present time the study of affections of the great sympathetic has been attended with considerable difficulty, in comparison with that of other nervous diseases. In the first place, our knowledge of the trophic and vaso-motor functions of the sympathetic is as yet incomplete. Secondly, while we possess numerous facts regarding the anatomical and microscopical lesions of the sympathetic system, especially through the labours of Foà, De Giovanni, Eulenburg and Guttmann, Lubimoff, Ebstein, etc.,* we have made but little advance in determining the relation between the various forms of lesion and certain groups of symptoms. Facts showing the relation between morbid symptoms and changes in the sympathetic are very rare; up to the present time, science has registered in this respect only one characteristic group of phenomena, that dependent on lesions of the cervical sympathetic. These facts, which are already sufficiently numerous, have confirmed in man the functional laws which physiopathology had discovered in animals.

CASE. *Cerebral Tumour (Gliosarcoma); Paralysis of the Right Cervical Sympathetic and Irritation of the Left; Fatty Degeneration and Atrophy of the Ganglion-cells.*—Marianna Carrani, aged fifty-five, was admitted into hospital on February 13, 1876. Up to the age of forty-five she had enjoyed excellent health. She had had two normal labours; and there was no history of nervous disease in her family. At the age of forty-five she began to feel weak in her legs, stumbled readily, and had intercurrent headache. Her strength diminished rapidly, especially in the lower limbs; these in a short time became affected with paresis, which passed into paralysis in the right leg. She was treated by her medical attendant for an affection of the spinal cord, by baths and by internal remedies of which the nature could not be ascertained. She became subject to frequent attacks of vertigo and intense headaches, which confined her to bed while they lasted; otherwise she continued to attend to her household duties, so far as the progressive loss of strength and the paralysis would allow.

Towards the end of December, 1875, she grew worse. The attacks of headache, limited especially to the right side of the cranium and to the forehead, became more frequent and more severe; she occasionally had vomiting, and the attacks of vertigo occurred several times in the course of a day. But there was no emaciation in proportion to the severity of the symptoms; the patient retained her robust and florid appearance. On February 12, the attacks

* Foà, Pio, 'Sull' anatomia patologica del gran simpatico. (*Rivista Clinica di Bologna*, 1874. De Giovanni, A., *Rendiconto dell' Istituto Lombardo*, Milano, Serie II., 1874. Eulenburg and Guttmann, 'Die Pathologie des Sympathicus auf physiologischer Grundlage,' Berlin, 1873. Lubimoff, 'Beiträge zur Histologie und patholog. Anatomie des sympathischen Nerven System,' *Archiv für Pathol. Anat. und Physiol.*, vol. xi., 1874. Lubimoff, *Archives de Physiologie Normale et Pathologique*, 1874.

of vertigo were so severe as to oblige her to go to bed. During the night she fell into a comatose state, and her family, believing that she had cerebral apoplexy, sent her into the hospital. When Dr. Morselli saw her on the evening of the 13th, the following was her condition.

She was a woman of robust formation, with an abundance of fat. She was bull-necked. She lay on her back in a state of complete muscular relaxation, in profound coma, with laboured respiration. The pulse was 80, the temperature 38.5° Cent. (102.3° Fahr.). The face was turgid, the eyes were closed, and there was abundant lacrymation from the right. The redness of the face was less intense on the left cheek than on the right; the conjunctivæ were not injected. The pupils were equally dilated, and reacted very slightly to stimulants. The reflex movements of the eyelids were preserved. There was complete relaxation of both the upper and lower limbs; sensation was abolished, but the reflex movements produced by tickling, etc., were exaggerated. The patient did not answer questions, and passed her urine and feces involuntarily. Dr. Morselli ordered a leech to be applied to each mastoid region, and large sinapisms to the legs, with cordials and tonics internally.

Towards the next morning, she regained a certain amount of intelligence and sensation, and was able to understand and answer questions. In two hours, however, she relapsed into a state of coma. An examination at the morning visit by Professor Paganucci and Dr. Morselli ascertained her condition to be as follows. Intelligence, sensation, and voluntary motion were quite lost; reflex movements were performed, though feebly, in the lower limbs, but were lost in the eyelids. The left upper limb and both lower limbs were in a state of muscular relaxation; there was contraction almost amounting to rigidity in the right upper limb, which was semiflexed. The pulse was 78, strong, irregular, and full; the respirations 24, deep, almost stertorous. The right half of the face was intensely red; the left, on the other hand, appeared very pale in comparison. The redness on the right side was spread over the forehead, cheek, nose, lip, chin, ear, and neck, and even partly over the shoulder. A distinct straight line passing downwards from the forehead to the neck separated the red from the pale region, but the limit was not so distinctly marked on the back of the neck and shoulders. On careful observation of the reddened half of the face, there was seen to be a fine injection of the cutaneous capillary network; the vessels appeared turgid, and, as it were, enlarged. This vascular turgor was especially apparent in the zygomatic region and cheek; and the contrast between the two sides of the forehead was very remarkable. The patient's face was completely like a domino mask, having one side red and the other white.

The right half of the face was turgid and more voluminous than the left. The difference was especially marked in the ears, the right presenting a most intense odoration, manifest turgor, and rosy transparency.

The skin of the right half of the face was moistened with sweat, while the left was quite dry. The sweat was collected in small drops, confined to the right side of the face and neck. The temperature on the right side was higher than on the left; the right ear actually felt warmer than the left. Unfortunately, no thermometric examination was made.

The right palpebra was more congested than the left, and there was greater vascularity of the right conjunctiva. The right pupil was more contracted than the left, although the contraction of both was very great. The left pupil was normally sensitive to light; the right was almost insensible to ordinary light, but was very slightly affected by the light of a candle. The right eyeball appeared on pressure and palpation to be slightly more flaccid than the left. No difference as regarded pulsation, volume, or resistance, could be detected between the carotids on the two sides. The result of physical examination of the organs of the chest and abdomen was absolutely negative.

In making a diagnosis, the idea of disease of the spinal cord was at once set aside, as being incapable of accounting for the headache, the vomiting, and the general course of the patient's illness. The symptoms pointed especially to lesion of the anterior lobes of the brain, and of the large ganglia at the base. But what was the nature of this lesion? It had been supposed to be cerebral hæmorrhage; but the patient's present condition, which gave rise to this supposition, had been preceded by symptoms of a slow affection of the nervous centres, indicated by paralysis, headache, debility, vomiting, and vertigo. It could not be doubted that there was a connection between the two. The case was evidently one in which a slow disease of the brain had arrived at its last and fatal stage. In favour of the probability of a tumour were the recurrent attacks of intense headache, the length of the illness, the vomiting, the long standing paresis of the right leg, and the contraction of the upper limb of the same side. It might, indeed, be supposed that the tumour was at first limited to a part of the brain in relation with the motor functions of the paralysed limb, while the contraction could be explained as a result of irritation, propagated to a neighbouring part. It was thought probable that there was a tumour, the progress of which had been slow, developed in the anterior part of the left hemisphere, and specially affecting the corpus striatum.

But there are other points of special interest in the history of this case—those connected with the sympathetic nerve; viz.

1. *In the right half of the face and neck*; increased temperature, injection of the capillaries, excessive sweating, congestion of the conjunctiva, narrowing of the palpebral aperture, very marked myosis, flaccidity of the eyeball, turgor of the ear and face.

2. *In the left half of the face and neck*; lowered temperature (in comparison with the right side), pallidity, dryness of the skin, considerable mydriasis, and increased ocular tension.

The first idea which Dr. Morselli formed, and in which he was supported by Professor Paganucci, was that there was an affection of the sympathetic. The symptoms observed corresponded with those observed by Claude Bernard and others, as the result of injury and disease of the cervical sympathetic. No lesion of the organs of circulation or of the central nervous could explain the symptoms observed in this case. It is quite well known in chemical experience, that compression of the sympathetic by tumours, or wounds of this nerve, as well as certain unilateral affections of the cervical spinal cord and brachial plexus, are accompanied by certain symptoms in the region supplied by the cervical sympathetic, which presides over the vaso-motor and trophic functions of the corresponding half of the head, and,

by its anastomosis with the oculo-motor nerve, exercises a marked influence on the eye and the pupil. In many of the cases related by Ogle, Demme, A. Eulenburg, Roszbach, Porteau, Mitchell, etc., there were unilateral symptoms; sometimes, but rarely, these were cardiac symptoms, without doubt connected with the sympathetic. In a case recorded by P. Guttman (*Berliner Klinische Wochenschrift*, August, 1875) the principal symptoms were exophthalmus, dilatation of the pupil, sanguineous sweating, redness of the face and neck, lacrymation, increased heat—all on the left side; the cervical sympathetic was painful on pressure. The same occurred in the cases of Seguin, Ebstein, Eulenburg, etc. The identical phenomena observed in experiments on animals are indeed not repeated in every casual case; sometimes one is absent, sometimes another; sometimes the order of their occurrence is inverted, as occurred in Guttman's patient, in whom there occurred at the same time symptoms referable to paralysis (excessive sweating, redness, etc.) and others referable to irritation (mydriasis). In the present case, the symptoms on the right side pointed to paralysis or paresis, and those on the left to irritation, of the cervical sympathetic.

In the afternoon of February 14th, the left half of the face and neck became slightly reddened and in the evening both sides were uniformly red and sweating, and both pupils had become almost insensible to light. The patient died early in the morning of the 15th, the coma having been before death interrupted by convulsions.

At the necropsy, there was found to be a tumour on the anterior part of the left cerebral hemisphere, extending into the corpus striatum. The tumour, which was carefully examined by Dr. Brigid, was found to consist: 1. In some parts of stellate cells, having among them much soft and finely granular cellular substance; 2. In other parts, of fusiform cells or globules of embryonic tissue united by a very scanty basement-substance; the morbid tissue was traversed by numerous blood-vessels, especially in the part formed of fusiform cells. These characters indicated the tumour to be a specimen of gliosarcoma (Virchow). There was no indication of new growth in any other part of the body.

While the presence of this tumour accounted for the symptoms observed during life, there was some ground for doubting, from the result of the *post mortem* examination, whether it entirely explained the sudden attack which preceded death. There was old endarteritis in the aorta; fragments of old coagula were found to have entered the circulation, and there was fatty disease of the heart. The suddenness of the last symptom led to the suspicion that there might have been embolism of the cerebral arteries. Emboli were indeed found in the spleen and kidneys, but their presence in the brain was not ascertained, the examination not being extended to the ramifications of the vessels.

Examination of the sympathetic nerve gave the following results. The right inferior cervical ganglion was larger than the left, but both were larger than normal. They presented a pale grey colour, especially the right ganglion. The semilunar ganglion was distinctly atrophied, and much paler than those in the neck. The other parts of the sympathetic nerve presented nothing special.

The superior cervical ganglia were immersed in alcohol for two days, and were then cut into very

thin slices, which were coloured with carmine and preserved in glycerine. Examination of these gave the following results.

1. *Ganglion-Cells*.—These were rather scarce in all the preparations, and had undergone various changes. Those which approached nearest to the normal state had their protoplasm infiltrated with pigment-granules of a red or orange colour, to such an extent that the outline of the nucleus could not be distinguished, and the nucleus could only be made out through its refrangibility.

Other cells were much reduced in size, had entirely lost their normal structure, and appeared as shapeless bodies composed of masses of granules, mostly pigmentary. Around these cells was a large amount of connective tissue, which surrounded them in such a way as to deprive them of nutriment, thus accounting for their atrophy.

Other ganglion-cells, equally and sometimes still more atrophied, contained small fat-drops lying towards one side of the enveloping capsule. These fat-drops were probably produced by degeneration of the epithelioid lining of the capsules. In other cells, small drops of fat were scattered in the protoplasm.

In some parts of the preparations, enteric patches of ganglion-cells were found to have completely undergone fatty metamorphosis, being, in fact, transformed into true adipose vesicles. In some of these vesicles the fat was fluid, homogeneous, and very transparent; in others it appeared to be coagulated or crystallising.

2. *Nerve-fibres*.—Those containing myeline were very scarce; the so-called fibres of Remak were much more abundant, but were altered in structure, being reduced in size, as well as their nuclei. Where the ganglion-cells had undergone fatty change, many fat-drops were found lying free between the fibres, sometimes arranged in series, as has been described by Lubimoff.

3. *Interstitial Tissue*.—In some parts this was greatly increased, and presented the microscopic characters of fibrillar connective tissue after being acted on by acetic acid, all trace of fibre having disappeared, and the nuclei alone remaining. At some other points, as in the right cervical ganglion, there was found a small area exclusively formed of connective tissue, substituted for the ganglion-cells and nerve-fibres. On the other hand, where fat was abundant, the connective tissue was almost in normal proportions.

4. *Blood-vessels*.—The vessels of the ganglia were generally obliterated by thrombi, and in one of the largest a large drop of fat was found. All the vascular canals had thickened walls, of fibrous appearance, and the membrana adventitia was in a state of proliferation. The thrombosis of the vessels was beyond doubt of old date, perhaps anterior to the fatty degeneration of the ganglia.

All these changes were more marked in the right upper cervical ganglion; in the left the first stages of the disease, and in the right the ultimate stages, could be studied.

The cervical sympathetic in this case then presented the following conditions: 1. Pigmentation, atrophy, fatty degeneration, and destruction of the ganglion-cells; 2. Atrophy and degeneration of the epithelioid elements of the nerve-capsules; 3. A special degeneration of the fibres of Remak; 4. Proliferation of the interstitial connective tissue, and, later on, deposit of free fat in it; 5. Thrombosis of

the capillary vessels, multiplication of the nuclei in and thickening of their walls, and fatty degeneration of the contents of the vessels. All this may be summed up as sclerosis and fatty degeneration of the cervical sympathetic. Lubimoff, who has made the most extensive researches in the pathology of the ganglionic system, says that fatty degeneration of the cells of the sympathetic is rare: in 250 bodies, he found it only once, in a cancerous patient. Professor Foà, from his researches on the same subject, concludes that in most cases of pigmentary infiltration the pigment originates in the cell itself.

In its clinical aspect, this is one of the very few cases hitherto noted (if it be not the first in which the diagnosis of disease of the sympathetic during life has been confirmed by microscopic investigation. Dr. Morselli is acquainted with only two cases in which it has been possible to make an examination of the sympathetic believed to be affected. One of these is related by Seguin in the *American Journal of the Medical Sciences* for October, 1872. A man, aged fifty, had abdominal cancer. For a long time he had sweating of left side of the face, the right side being dry. At the necropsy, the right sympathetic was found adherent to the sheath of the vessels, and towards the bifurcation of the common carotid was much congested; the left sympathetic was normal. The only histological change noted was slight increase of pigmentation in the cells on both sides. The result of examination in this case, Dr. Morselli observes, is negative, since the pigmentation of the ganglion-cells varies in different individuals (Lubimoff). Ebstein describes in Virchow's *Archiv*, Band lxii., a case of unilateral sweating of the head, in which the cervical ganglia on both sides appeared of normal size and consistence. But, on hardening them in Müller's solution, one could see with the naked eye, in the ganglia corresponding to the affected side, points as large as a grain of sand, with round outline, and of a brown colour. These were formed of enormously dilated and varicose blood-vessels. There appears to be no report of a microscopic examination.

The alterations in the cervical ganglia explains the symptoms presented by the patient Carrani during the last days of her life. On the right side, where the pathological changes in the superior cervical ganglion were most advanced, the symptoms were more marked than on the left side, where the change appeared to be only in the first stage. On the right side, the paralysis produced by the morbid process was fully developed; on the left side, there was probably simple irritation of the sympathetic. The case presents other important questions for selection; for instance, how far the presence of the cerebral gliosarcoma may have disturbed the nutrition of the sympathetic to such an extent as to cause so grave an alteration in the cervical ganglia. Lubimoff, Foà, Poncaré, Petroff, and others who have studied the pathological anatomy of the sympathetic nerve, say that they generally found it oftenest in chronic diseases, especially cancerous and sarcomatous affections, tuberculosis, syphilis, and progressive paralysis. There might then be supposed to be some relation between the gliosarcoma and the disease of the sympathetic in the case of Carrani; but there was no formation of new growths in other parts of the body. Moreover, gliosarcoma of the brain belongs to the class of more benign sarcomata, which are developed slowly and very rarely tend to become generalised; hence it is not

probable that the tumour had much direct influence on the sympathetic. Another question for consideration is, whether the presence of the tumour may not have affected the vaso-motor nerve-fibres which pass in the brain to the surface of the cerebral lobes, and by irritating them, have interfered with the contractions of the superior cervical ganglia to such an extent as to cause their degeneration.

SCHWABACH ON THE PATHOLOGY OF THE CERVICAL SYMPATHETIC NERVES.

Dr. Schwabach, of Berlin, remarks (*Berliner Klinische Wochenschrift*, July 17, 1876), that, although neuroses in the domain of the sympathetic nerves can no longer be regarded as rare, yet their complexity is such as to justify the publication of those cases which occur from time to time. In one series of observations the phenomena are chiefly those of irritation, in another series the symptoms are chiefly paralytic, whilst a third set combines both in a well-marked manner. To this third kind we must refer the instances where the fibres supplying the pupil of the eye, and the eye itself, are irritated, whilst the vaso-motor fibres are paralysed. And again, there are cases in which there is an abnormal secretion of perspiration in some limited spot. The patients whose histories are subjoined sought advice for their deafness and ear affections, and did not complain much of the other symptoms, due to the sympathetic. The cases are as follows.

1. S. K., aged twenty-one, a sempstress, suffered from deafness in the left ear. The cause appeared to be a narrowing of the meatus auditorius externus due to an exostosis on the anterior wall. The passage was narrowed to a mere chink. The whole of the right side of the face, forehead, cheek, and region of the nose, as well as the right ear, showed a diffuse redness, and the temperature was perceptibly higher than on the other side, particularly in the ear itself. The patient said that this region was still hotter when she ate, or was excited, or on hot days, and that on such occasions there was a very abundant flow of perspiration on this side only. No pain was complained of. There was nothing abnormal on the left side. Both ocular apertures were alike; and no difference could be discovered in the size of the pupils.

2. W. P., a tailor, aged forty-three, had suffered from childhood with discharge from both ears. For many years past he had not heard at all in the left ear, and very badly with the right one. This patient's speech was somewhat indistinct. The membrana tympani on both sides was represented by a mere ring; the mucous membrane of the middle ear was pale red, and swollen. Nothing was to be seen of the ossicles on either side. The right side of the face showed redness on the forehead and cheek, extending from this to the right temple, and to the region of the right ear, which again was most intense in the external ear itself. The temperature in this case was perceptibly raised on the right side. There was no visible perspiration, but the patient said sweating occurred here on the least exertion. The right ocular aperture was less, and the right pupil manifestly smaller than the left side. Accommodation seemed unaffected. There was no discoverable cause for this affection of the sympathetic. There were no tumours, and no sign of any traumatic lesion in the neck.

3. E. A., aged twenty-three, a needlewoman, sought advice on November 29, for a slight attack of left-sided otitis externa. The walls of the meatus auditorius externus were reddened, slightly swollen, and the vessels of the membrana tympani in the course of the handle of the malleus and round the periphery were injected. The membrane itself was very slightly affected. The luminous cone (*Lichtkegel*) was wanting. (See Hinton's translation of Von Troeltsch's 'Diseases of the Ear' New Syd. Society, pp. 4 and 15.) The neighbourhood of the tragus was sensitive to pressure. A watch was heard at four inches. After inunction of blue ointment in front of the ear, and bathing with lukewarm water, the inflammation subsided, so that on December 3 the pain had vanished, and even the subjective feelings were nearly all relieved. On December 13 the patient returned, and complained of pain in the left side of the neck. A lymphatic gland, of the size of a hazel-nut, and tender on pressure, was found close to the angle of the lower jaw, and the subcutaneous areolar tissue round it was swollen. At the same time there was an intense redness of the whole of the left face, and the neighbourhood of the left ear—which was again most evident in the pinna. There was no swelling of the external ear or of the meatus, though the latter was slightly reddened. The ear-speculum and thermometer gave no pain. The temperature of the right meatus auditorius externus was 36° 6' C. (97° 8' F.) whilst that of the left was 37° C. (= 98° 6' F.) The conjunctiva of the left eye was reddened, and the secretion of tears increased. The ocular aperture and diameter of the pupil were alike on both sides. Neither patient nor doctor observed any abnormal perspiration. Before the redness set in, she had several times an intense feeling of cold and shivering on this side, which vanished every time after a few minutes. Mercurial inunction was again prescribed, and the glandular swelling subsided, so as to be imperceptible by December 20. But the redness of the left face was still perceptible, though less marked. The patient said that tears still flowed freely from the left eye. This, however, was not seen by the doctor. On December 28 all these symptoms had vanished. In all these cases the vaso-motor nerves were affected. In only one the oculo-pupillary. This is exceptional according to Guttman ('Zur Pathologie des Sympathicus,' *Berliner Klin. Wochenschrift*, 1875, no. 32.) In the *Archiv für Augen- und Ohrenheilkunde*, (1875, vol. iv. part 2,) Burnett details three cases of deafness and noises in the ears, with redness of the parts near the ear, and considers them examples, in all probability, of central irritation of the sympathetic nerves. In these cases oculo-pupillary symptoms appear to have been absent. Increased perspiration is less common than the redness. Increased lachrymation seems to be still more rare. In all the accessible literature Dr. Schwabach could only find five cases of this symptom. He refers to the authors mentioned in the foot note.* Dr. Schwabach considers that

* Weir Mitchell, Morehouse and William Keen, 'Gunshot Wounds and other Injuries of Nerves,' Philadelphia, 1864. Seeligmüller, *Berlin. Klin. Wochenschrift*, 1872, no. 4. Guttman, *loc. cit.* Bernhardt, *Berlin. Klin. Wochenschrift*, 1872, nos. 47, 48. Nicati, 'La Paralysie du Nerf sympathique cervical,' Lausanne, 1873, Cas. 22. Eulenburg and Guttman, 'Die Pathologie des Sympathicus auf Pathologischer Grundlage,' Berlin, 1873. [See also a case by A. Otto, 'Beitrag zur Pathologie des Sympathicus,' *Deutsch Arch.*, Bd. xi. p. 609, and J. F. Payne, *St. Thomas' Hospital Reports*, vol. iii. p. 171, and O. Berger 'Zur Pathogenese der

only the last of the cases recorded above can be justly considered as dependent on the ear-affection, although all three were most probably to be referred to the sympathetic nerves.

W. BATHURST WOODMAN.

THE THERAPEUTICS OF HEADACHE. BY A. A. SMITH, M.D., LECTURER ADJUNCT UPON CLINICAL MEDICINE.*

We take up to-day the therapeutics of certain forms of headache, a very important subject. Headache may be divided into organic and functional; but I believe you will get a better idea of the treatment by dividing the cases according to the causes.

Neuralgic Headache.—A headache, when due to nervous disturbance, such as occurs in hysterical or excitable subjects, if associated with plethora, often yields to a saline cathartic. The most agreeable is the solution of citrate of magnesia, and should be given, a full bottle of it, on an empty stomach. In addition, it is well to give one of the bromides combined with valerian. The following prescription I frequently use:

R Sodii bromidi, ʒvj
Elix. valer. ammoniat. ʒiv.

M. Sig. ʒj. every hour until relieved.

If such nervous headache be associated with anæmia, after relieving the immediate attack with the bromide and valerian prescription, give iron, and give it for weeks, until there is a decided improvement in the patient's condition. Always give the iron after meals. In these anæmic cases it is often advisable to stimulate the heart's action. For this purpose I have found the following useful:

R Ammonizæ muriatis, ʒss.
Tincturæ actææ racemosæ,
Aquæ, aa ʒijj.

M. Sig. ʒij. after meals in a wineglass of water.

If there be despondency and depression of spirits, phosphorus, with nux vomica, is a good combination. The unpleasant taste of the phosphorus has been overcome by being made into sugar-coated or gelatine-coated pills. I frequently prescribe a pill containing phosphorus gr. $\frac{1}{50}$, with extract of nux vomica gr. $\frac{1}{8}$ thrice daily, with the happiest results. These pills can be obtained of any reliable druggist. This despondency is apt to occur in those who have been overworked mentally, or are harassed by business cares, or who suffer great mental anxiety. If in addition to these symptoms there be sleeplessness, I employ the following pill:

R Camphoræ pulveris, gr. xxv.
Ext. cannabis Indicæ, gr. x.
Ext. hyoscyami, gr. xx.

M. Divide in pill No. x.

Sig. One at night. Repeat in two hours if necessary to produce sleep.

It is important to attend to the general health of the patient. Remove all causes of excitement; encourage exercise in the open air; let the food be simple, but nutritious; let the sleeping room be large and well ventilated; in short, let the patient be surrounded by the best possible hygienic influences.

Hemicranie,' Virchow's *Archiv*, Bd. lix., 315. [Some other references will be found in the New Sydenham Society's *Biennial Retrospect*, 1873-74.—REP.]

* A Lecture delivered at Bellevue Hospital Medical College. (From the *New York Medical Record*.)

These general remarks will apply to almost all forms of headache.

Sick Headache.—I usually recognise two forms of sick headache (so-called); the one neuralgic in character, as hemicrania and trifacial neuralgia, the other a dyspeptic headache. In the neuralgic variety, the pain in the head precedes the nausea, while in the dyspeptic variety the pain in the head succeeds the dyspeptic symptoms. In the neuralgic, vomiting does not relieve the pain, while in the dyspeptic an emetic or laxative often relieves the pain in the head by removing the cause. In addition to the treatment given in a previous lecture for neuralgic headache, which often occurs at intervals of a few days, or a week or two, sometimes coming on at sunrise and disappearing at sunset, I have good results from the use of guarana, or paullinia sorbilis, as it is sometimes called. I give it usually in powder, fifteen grains every fifteen minutes, until six doses have been taken. It is best given in a little sweetened water; and, if six doses do not relieve, do not continue it; it will probably not relieve. It is well to give these powders in any headache (not malarial) of long standing and prone to return at certain intervals.

Malarial Headache.—Malarial poison may produce pain in any portion of the head, but the most frequent locations are the suboccipital region, the frontal, and on either side (hemicrania). Begin your treatment by the use of quinine. If distinctly periodical, give ten or fifteen grains two or three hours before the expected attack. It may be necessary to push the quinine in divided doses until cinchonism is produced, and kept up for several days, and then gradually diminish the dose. If the pain still continues to recur, and it frequently will, resort to arsenic and belladonna, five-drop doses each of Fowler's solution and belladonna tincture, after meals, increasing the Fowler's one drop each day, until œdema arsenicalis is produced. This will seldom fail to give relief.

I have found the following prescription beneficial in a headache dependent on gout:

R Vini colchici seminum, ʒij
Lithii bromidi, ʒss.
Syr. zingiberis, ʒss.
Aq. cinnamonii, q. s. ad ʒvj

M. Sig. ʒss. in a tumbler of Vichy water every four hours.

Such patients will be benefited by the regulation of hygiene, tonics, and a partial discontinuance of stimulants, particularly those which have been found by experience to aggravate the gouty symptoms.

Syphilitic Headache.—It is hardly necessary that I should tell you that the headache of syphilis is more severe at night, and is quite apt to awaken the patient after twelve by its increasing severity. The use of calomel in one-tenth grain doses every hour, for twelve hours immediately preceding the time that it awakens the patient, gives more rapid relief than the ordinary constitutional treatment. The calomel treatment may be continued for two or three days, and then stopped and iodide of potassium given. I usually begin the iodide in fifteen-grain doses after meals, and gradually increase it until iodism is produced or irritation of the stomach occurs, provided the symptoms do not yield earlier. It may be necessary to push it to 350 or 400 grains a day before the symptoms yield.

Rheumatic Headache.—The headache of rheumatism is characterised usually by tenderness of the

scalp, which is increased on pressure or motion. Use the mild faradic current on the scalp, and internally the following:

R Potassii iodidi,
Ammonie muriatis, ʒā ʒjss.
Infusi humuli, ʒvj

M. Sig. ʒss. four times a day in a wineglass of water.

In some cases of rheumatic headache, which have not yielded to the above treatment, I have found bromide of ammonium in twenty-grain doses every two hours effectual.

Uræmic Headache.—There is another form of headache which is of great importance as a symptom of serious disease. The pain in the head may be the first evidence you will obtain that there exists renal disease, and that you really have to deal with uræmic headache. The judicious plan of treatment in such cases has for its object the removal of the abnormal amount of urea from the system. To accomplish this, you may call into action one or all of the three great emunctories of the body, the kidneys, the intestines, and the skin. Make the kidneys act if you can; apply dry cups over the region of them, and give internally the following:

R Potassæ acetatis, ʒvj
Infusi digitalis, ʒvj

M. Sig. ʒss. every third hour.

The infusion should be made from fresh English leaves. Give this until the kidneys act freely, if you can make them do it within twenty-four hours. You cannot always rely on this, however. If the kidneys do not act freely, and the headache be not relieved within twenty-four hours, give a saline cathartic. A treatment almost domestic, and often very effectual, is to put an ounce of cream of tartar in a quart of water, and have the patient drink this in eight or ten hours. It acts both as a diuretic and cathartic. Do not use hydragogue cathartics unless convulsions be threatened; they are too irritating to the intestinal canal. Some prefer to eliminate the urea by the skin. This can be done by diaphoretics and the hot, moist, or dry air bath. Do not think that you must use diuretics, cathartics, and diaphoretics in all cases of Bright's disease; use them where there is deficient quantity of urinary secretion, and where you have reason to believe urea is accumulating, and that you can relieve the patient by ridding the system of it. There are other causes of headache in Bright's disease which, I believe, occur independently of the presence of an abnormal amount of urea in the blood, and yet which are dependent on the results of the kidney-disease. These causes may be anæmia, neuralgia, œdema of the brain itself, serous effusion into the ventricles, and, in acute Bright's disease, cerebral congestion in addition to accumulation of urea. Under the last condition, if the headache be very severe and convulsions threaten, take blood, if the patient's condition will admit of it. Take twelve to twenty ounces, if necessary to relieve distressing symptoms. The best way to take it is by means of wet cups over the region of the kidneys.

If the patient be anæmic, improve the general condition by the use of tonics, good nutritious diet, stimulants, exercise in the open air, etc.

If the headache be dependent on serous effusion into the ventricles, or on cerebral œdema, here too improve the vitiated condition of blood and stimulate the heart and kidneys by acetate of potash and infusion of digitalis. There is apt to be with this effusion and œdema general anasarca.

The Headache of Acute Alcoholism, or inebriety, follows a debauch. The first indication is to remove the alcohol from the intestinal canal. For this give of rhubarb and magnesia calcined each a half drachm, and then give the following :

R Spiritus ammoniæ arom. ʒij
Tincturæ camph. ʒjss.
Tincturæ hyoscyami, ʒjss.
Spiritus lavandulæ comp. q. s. ad ʒij

M. Sig. ʒj. every hour until the headache is relieved, and then give capsicum gr. ij and quinine gr. iij before each meal for several days. If there be sleeplessness, give

R Sodii bromidi, ʒss.
Chloral. hydrat. ʒjss.
Syrupi aurantii cort. ʒss.
Aquæ, ʒijss.

M. Sig. ʒss. at night, repeat in two hours if necessary to produce sleep.

Dyspeptic Headache.—Dyspepsia is a frequent cause of headache. If there be indigestible food in the stomach, and it have been there some time, give an emetic, as mustard and warm water, or sulphate of zinc gr. xv., and remove it. If there is evidence of indigestible food in the alimentary canal beyond the stomach, give gr. xx. of rhubarb and magnesia each, and remove it from the bowels. If the headache be frontal, and the pain be located immediately over the eyes, give dilute nitromuriatic acid in ten-drop doses, well diluted, after meals. If the pain be located about the roots of the hair, give an alkali before meals, as gr. xx. of bicarbonate of soda or magnesia. The dyspeptic headache oftentimes is not confined to these regions, but spreads over the entire head. In such cases I combine an acid with an alkali, and add to these nux vomica, as in the following prescription :

R Sodæ bicarbonatis, ʒjss
Acidi nitro-mur. diluti, ʒij
Tinct. nucis vomicæ, ʒjss.
Syr. aurant. cort. ʒvj
Aquæ, q. s. ad ʒvj

M. Sig. ʒss. after meals in a wineglass of water.

If there be gastric pain, a mild counterirritant, as a mustard plaster to the epigastrium, will often relieve the pain in the head as well as the pain in the stomach. If flatulence be a troublesome symptom, give the following :

R Bismuthi subcarbonatis, ʒjss.
Tinct. nucis vomicæ, ʒjss.
Tinct. cardamomi comp.
Spiritus lavandulæ comp. aa q. s. ad ʒiv.

M. Sig. ʒij. before meals in a wineglass of water.

If there be constipation, the following pill may be given, one in the morning :

R Aloes pulv. ʒss.
Ext. nucis. vomicæ, gr. v.
Ext. belladonnæ, gr. iv.

M. Div. in pilulas xv.

In some forms of headache associated with stomach indigestion I have found small doses often repeated of tincture of nux vomica effectual. I give a single drop every fifteen minutes, and continue this two or three hours if necessary. In other cases, where the headache comes on soon after a meal, and seems to depend on delayed stomach digestion, large doses of pepsin are effectual. Give a half drachm of saccharated pepsin in a wineglass of sherry wine, three times a day, and let it be taken during meals.

Congestive Headache.—Cerebral congestion as a cause of headache may be divided into two varieties, active and passive. These demand almost directly opposite plans of treatment. In the active variety the patient should be kept in a darkened room, per-

fectly quiet, cold and evaporating lotions applied to the head. A saline cathartic may be given, and the following prescription :

R Sodii bromidi, ʒjss.
Fl. ext. ergot, ʒjss.
Syr. zingib. ʒss.
Aq. aurant. flor. q. s. ad ʒiv.

M. Sig. ʒss. every two hours.

If the skin be hot and dry, and the pulse full and rapid, give two drops of Fleming's tincture of aconite root every two hours, until the heart's action is sensibly diminished. Sometimes a hot mustard foot-bath will give relief.

The passive congestive variety demands a different mode of treatment. In many cases this variety is found associated with cardiac disease, and most frequently where there is predominant dilatation. Hypertrophy gives rise to the active variety. Improve the condition of the blood by the use of iron, quinine, bitter tonics, alcoholic stimulants, good food, and stimulate the heart's action by the use of the following :

R Tinct. digitalis, ʒij
Spirit. amm. arom. ʒvj
Spirit. lavandulæ comp.
Syr. simp. aa q. s. ad ʒijj.

M. Sig. ʒj every four hours.

Anæmic Headache.—Cerebral anæmia produces a headache, which is often mistaken for the passive cerebral congestive form. It is often associated with general anæmia, nervous exhaustion, and may occur in heart disease, in consequence of enfeebled heart power, such as is met with in enlargement with dilatation, fatty degeneration, and myocarditis. Improve the general condition of the patient, and stimulate heart's action as recommended in the passive cerebral congestive variety. Nitrite of amyl will relieve the immediate headache. Let the patient inhale three to five drops of it on a piece of cotton, placed within one nostril while the other is held closed. When associated with nervous exhaustion, I employ the following :

R Strych. sulph. gr. ss.
Tinct. ferri chloridi ʒij.
Glycerinæ ʒss.
Infusi gentian. q. s. ad ʒvj.

M. Sig. ʒss. after meals, in a wineglass of water.

A word as to alcoholic stimulants. These are beneficial in headache dependent on cerebral anæmia. Champagne is a specially favourite form, and is much relished by those who suffer from nervous exhaustion. You should use caution in recommending it to such patients, as it may lead to serious results. Give it always as a remedy, and not as a beverage. A safe plan is to recommend brandy, a tablespoonful after each meal, and limit the champagne to one glass, and let it be taken with the dinner.

Cerebral tumours give rise to headache, often severe. In all cases of cerebral tumours, give iodide of potassium ; for it cannot be safely said that in any given case the tumour does not depend on syphilis, and by administering the remedy you give the patient the benefit of the doubt.

There is reason to believe, too, that patients with cerebral tumours, dependent on other and unknown cases, are benefited by the use of iodide of potassium. I have previously given you directions as to the method of giving the iodide. Sometimes the pain is so severe that you are justified in resorting to opium to relieve it. If there be much sleeplessness, give sleep by the use of the bromide and chloral mixture.

The headache of cerebral softening may be palliated by opium and rest. Such patients should have the best possible hygienic surroundings. If there be sleeplessness and much irritability of the nervous system, the combination of bromide with chloral is indicated. Ergot has been used for the relief of the headache, in these cases, by those having charge of insane asylums, where this condition is frequently met with, and the testimony is in its favour as a valuable remedy. It is usually given in large doses, beginning with 3j of fluid extract, three times a day, and gradually increasing to 3ss.

Almost all cases of increase of temperature of the body above 103° are attended with headache. To relieve it reduce the temperature, according to the plan given in a previous lecture; apply cold and evaporating lotions to the head, and keep the patient free from noise and excitement. A full opiate will often relieve such a headache, save the patient much suffering, and effect favourably the progress of the fever.

The mere mention of worms in the alimentary canal, hæmorrhoids, uterine and ovarian disturbance, and optical defects, as causes of headache, will suggest the remedy.

SCHWARTZ ON THE TEMPERATURE IN PHTHISIS PULMONALIS.

About fifty-two pages of the *Verhandlungen der Physikal-Medicin. Gesellschaft in Würzburg* (Neue Folge, Band ix. Heft. 3 and 4) are occupied with a paper by Dr. Albert Schwarz, of Türkheim in the Palatinate, on the types of fever in pulmonary phthisis. The material is from patients in the Julius Hospital, by the kind permission of Dr. Gerhardt. The temperatures were taken in the axilla, at 6 A.M. and 6 P.M. In very interesting cases, Dr. Gerhardt had temperatures taken every three hours (at 6, 9, 12, etc.) or eight times daily. Dr. Schwarz remarks that pulmonary consumption is nearly always attended with fever. Cases free from fever in their later stages are extremely rare. This fever is, however, rarely typical in the same sense as that of croupous pneumonia, or abdominal typhus. It is rare to find two phthisical cases with exactly the same sort of curves. The same anatomical lesions induce in one case moderately febrile temperatures, in another high fever. Sometimes the evening temperatures are highest, at other times the morning. Sometimes there are two exacerbations in the same day. In short, all possible varieties are met with. The causes of pyrexia in phthisical patients are (1) morbid processes originating in localised lesions, (2) secondary disorders of the whole system originating in these, (3) one or other of the common complications of phthisis, (4) individual peculiarities; at all events, the varieties in the height of the fever are partly due to these idiosyncrasies.

If we look at these conditions in another way, we may first consider the local changes in the lungs of such patients:—suppuration, and inflammatory products, perhaps undergoing retrograde metamorphosis. These purulent or disintegrating matters are absorbed by lymphatics and blood-vessels. Hence arises a fever of 'purulent infection,' analogous to that set up by suppurative processes elsewhere. From these conditions we get (a) different degrees of fever at different times of the day; when absorption is most active we get exacerbations, and *vice versa*. (b) The course is irregular all through the complaint; for

example we get (a) great exacerbations when these processes go on rapidly, and there is increased absorption, and, (β) stages free from fever, explained by the local stand-still during calcification, etc. In this way the fever is checked. (γ) The influence, or want of influence, of remedies upon the disease, will affect (or otherwise) the course of the fever. 2. As to the reaction on the system, we know but little; certainly there are diminished oxydation, diminished (normal) warmth-production, diminished combustion of albuminous and other bodies, defective nutrition, and the like changes. These things rather tend to lower than to raise the temperatures. 3. Amongst complications, inflammatory attacks, pleurisy, bronchitis, pneumonia, etc., must not be forgotten. 4. As to idiosyncrasies, the author refers doubters to analogy, instancing the urethral fevers met with in certain persons from the passage of a catheter, etc. The author then proceeds to consider his own observations on phthisical temperatures, and arranges them as follows.

A. *Morning temperatures* are the most important in prognosis. These are (1) either normal, or (2) exhibit morbid disturbances. In the latter case they are either (α) subnormal, or (β) moderately high, or (γ) highly febrile temperatures. He gives the following table:

Cases Discharged Improved		Fatal Cases
Subnormal Temperatures sometimes occur in both classes		
Normal		
96°8' to 97°7' F.	2 cases	6 cases
97°8' to 98°6' F.	7 "	4 "
98°7' to 99°5' F.	10 "	14 "
99°6' to 100°4' F.	2 "	9 "
Febrile		
100°5' to 101°3' F.	4 cases	3 cases
101°4' to 102°2' F.	1 "	9 "
102°3' to 103°1' F.	0 "	4 "
High Fever		
103°2' to 104°0' F.	0 cases	13 cases
104°1' to 104°9' F.	0 "	1 "
105°1' to 105°8' F.	0 "	1 "

We thus see, for morning temperatures twenty-one normal (or 81 per cent.) and five febrile or highly febrile (or 18 per cent.) amongst those who were discharged improved in health; whereas in the fatal cases, the respective numbers are thirty-three normal and thirty-one febrile and highly febrile, or 51 and 49 per cent.

B. *Evening temperatures* may be divided into the same classes as the morning. We have the following table given us of the same number of cases (twenty-six discharged as improved, sixty-nine fatal ones).

Examining these in the same way as we did the morning temperatures, we find amongst the cases which improved, 38·5 per cent. with normal, and 61·5 per cent. with febrile and highly febrile temperatures. Of the fatal cases we find only 16 per cent. with normal, and 84 per cent. with febrile and highly febrile temperatures. Temperatures above 105°8' F. are exceptional.

C. *Subnormal temperatures* are either, (1) a sign of collapse, which is so common, that subnormal temperatures may be regarded in most cases as identical with terminal temperatures—only remembering that, (2) subnormal temperatures often occur, in the morning especially, with increased body-weight, and good general health, especially in the early stages

of the lung disease. The lowest subnormal temperature in our charts is 90° F. (an evening observation); then follows a morning one of 90.2° F., an evening

Cases which Improved	Fatal Cases
Solitary Subnormal Temperatures occur in both classes.	
Normal	
96°8' to 97°7' F.	0 cases
97°8' to 98°6' F.	8 "
98°7' to 99°5' F.	4 "
99°6' to 100°4' F.	3 "
Febrile	
100°5' to 101°3' F.	5 cases
101°4' to 102°2' F.	9 "
102°3' to 103°1' F.	22 "
Highly Febrile	
103°2' to 104°0' F.	3 cases
104°1' to 104°9' F.	14 cases
104°1' to 104°9' F.	0 "
105°1' to 105°8' F.	3 "
105°8' and over	isolated observations in both classes
Total	26
	69

one of 92.3° F., several of 93.2° , and so on. The very low temperatures are generally just before death. In one case, the first subnormal temperature occurred twenty-six days before death. It amounted to 96.4° F.

Of the Types of Fever in Phthisis.

The temperature in phthisical cases is either, (1) normal which is rare, or (2), febrile. As regards the latter, the fever may occur at different times of the day, may remain constant, show longer or shorter exacerbations, and periods of deservescence of more or less length, and, in short, show various types. The commonest form is, in twenty-four hours, one period free from fever, alternating with an ascent above 100.4° F. the rise being in the morning, or in the evening—less often at odd times. More rarely, two febrile periods alternate with one fever-free one; or two periods free from fever with one febrile in the twenty-four hours—Lebert's unbroken type (*typus infractus*). In still rarer cases three rises of temperature, or even more, may be seen. Sometimes, indeed not very rarely, we meet with cases of continual fever—that is cases in which the remissions never go below 100.4° F. Thus there is always fever. As regards the observations at two fixed times of the day, we find the charts thus made by a combination of morning and evening temperatures present the following four types.

A. The type of normal temperatures; in other words, both morning and evening temperatures are within normal limits, the evenings being a few tenths above the morning (seventeen cases).

B. Type with slight evening fever, with normal (but seldom subnormal) morning temperatures (twenty cases).

C. Type of more intense evening fever, in which we get :—C¹. Morning temperature normal or subnormal, so that the charts resemble those of an intermittent quotidian or tertian fever. C². The morning temperatures are febrile also, but a few tenths lower than the evening ones, thus resembling a continuous remittent fever (fifty cases.)

The types B and C are members of one family, and are merely separated for systematic purposes.

D. The *inverted type*.—In this the morning temperatures are febrile, often extremely so, and the evening normal, or only moderately febrile. Here

we get a *febris remittens quotidiana* and a *febris remittens*, only the acme is in the morning hours (three cases).

As a fifth type may be reckoned the *Typus inversus intercurrentis*, the definition of which will be given afterwards. These types run one into the other, and are seldom constant. There is no very fixed anatomical or pathological relation between symptoms and lesions and these types.

Remarks on these Typical Forms.

A. The normal type or curve resembling that of health, occurs (a) when the local disease has only made slight progress; (b) When the disease is checked, or has come to a standstill, either spontaneously or from treatment; (c) Towards the close of the disease, with marastic symptoms, or in consequence of a lower grade of vitality being reached; (d) Hæmoptysis causes temporary returns to normal temperatures; (e) The author met with four complicated cases, in which there were normal temperatures; but the phthisical processes consisted in induration of the lung.

B. The type of mild evening fever, with normal morning temperatures. This type affords us little aid in prognosis, as it occurs both in cases which improve (nine cases) and in those which end fatally (four cases). We may, however, say (1) that it may occur at the very beginning of the disease (beautifully shown in two cases); 2. It may prevail all through the disease [one case shows this very well]; 3. It may occur as a terminal form of the fever; 4. It may occur, intercurrently, after hæmoptysis (three cases).

C. The type with great intensity of evening fever. This, as has been already said, occurs in two different forms—one like a quotidian intermittent fever, with evening exacerbations, and normal or even subnormal morning temperatures; and the other as a continuous fever with more or less remission in the mornings. Of these we may remark (a) an intermittent type with rather high evening temperatures, which are often above 104° Fahr., the morning temperatures being generally between 96.8° and 98.6° Fahr. But subnormal and slightly febrile temperatures sometimes occur in the mornings. This type with high evening temperatures is pretty constant where it once occurs. The prognosis is bad. (b.) The remittent type is by far the commonest of all. The evening temperature is often febrile, it may be highly febrile. There is a remission during the night, but seldom complete apyrexia. The remissions seldom amount to more than one degree Centigrade (1.8° Fahr.).

This type is often chronic as regards the duration of the cases. Yet the cases are sometimes acute as regards wasting and other symptoms. One of our cases lost 20 grammes (nearly $\frac{3}{4}$ oz.) of body-weight daily, for three months continuously. Although the actual temperatures attained are never very great, indeed seldom above 103.1° Fahr., yet the prognosis is almost always unfavourable.

D. The *typus inversus*, or type in which the morning temperatures are febrile or highly febrile, whilst the evening temperatures are normal or only febrile, thus resembling an intermittent in which the morning hours exhibit the acme as regards fever. The reasons of this peculiarity are difficult to find. Jochmann ascribes it to the use of digitalis, but this will not explain our cases; indeed, it must be confessed that digitalis has but little effect on the tem-

peratures. This type is rare, only three out of ninety cases exhibiting it.

E. The intercurrent inverted type. Nearly all the cases exhibit occasional deviations from their prevailing type. In many of the cases we find that the time of day which used to be the fever period becomes for a time the period of freedom from fever, and *vice versa*. This intercurrent inversion of the typical form occurs in all varieties of the fever, as will be seen from the following table.

Types	No. of days observed	Days of Inversion of type occurring intercurrently	Percentage of such
A.	453	80	18
B.	611	81	13
Ca.	300	8	2.6
Cb.	1651	263	16
D.	197	30	16
Total . .	3212	462	14

An inversion of the type is thus seen to occur about once a week, in all the cases together.

This inversion of type appears to be a pet subject with Dr. Schwarz, since he devotes nearly six pages to it. The rest of the paper is occupied with remarks on collapse temperatures; on the subjective feelings of warmth in phthisical patients; on the relation between temperature and the frequency of the pulse [in which the author, in the reporter's opinion, is too much inclined to undervalue the indications afforded by the pulse]; on perspiration in relation to the fever of phthisical patients, and on the relations of hæmoptysis to the fever. In all this there is very little novelty, more space being given to criticism of Lebert and other authors than to original work.

The following table exhibits the prognostic value of the several types.

Types	Cases with Improvement	Cases with Fatal Termination
A. Normal temperature	9	7
B. Moderate evening temperatures	8	12
Ca. Intermittent type	1	7
Cb. Remittent „	7	36
D. Inverted „	1	2
Totals	26	64

The author's general conclusions from these figures are as follows. 1. The majority of cases of phthisis end fatally; but, 2. The prognosis may be regarded as favourable in about half of those cases in which the temperature is either normal or mode-

Types	Cases with Improvement	Cases with Fatal Termination
A. and B.	17	19
Percentage	47	53

rately febrile, as shown by the figures in the last table. 3. The prognosis is a very unfavourable one when for some time the patient shows a fever-curve with intermittent, remittent, or inverted type. The most unfavourable of all is the pure, hectic, intermittent curve. As regards the effects of remedies, the author speaks very disparagingly. He has no word of praise for any of them, except atropia, which he admits to have a favourable effect in lessening the excessive perspirations, and on the general comfort of the patients. W. BATHURST WOODMAN.

ANATOMY AND PHYSIOLOGY.

DUPUY ON THE LOCALISATION OF MOTOR CENTRES.—At a meeting of the American Neurological Association (*New York Medical Record*, July 15), Dr. Eugene Dupuy, of New York, read a paper upon the above subject, which may be summarised in the following propositions.

The cortical substance of the brain was not excitable by any means, either physical, chemical, or mechanical.

The effect of electricity, when applied to the surface of the brain, was not localised, but diffused, and the motor results obtained when electricity was used were not due to the direct action of the irritant, but were altogether reflex.

No part of the brain-substance was excitable except the nerve-fibres, and there was no way by which nerve-cells could be excited except by exciting the nerve-fibres with which they were connected.

When electricity was applied to the cortex, motion might take place, but it was not the nerve-cells themselves which were put into action, as proved by experiments. The cranium of an animal was laid open, a point made sure, which, when irritated, gave rise to certain motions, and then the pia mater was rendered opaque by means of hot iron; but motion followed the application of an irritant, the same as before. The wound was then allowed to close, and at the end of a month the electrodes were applied over the dura mater covering the same spot, and motion was produced upon the same side of the body. The dura mater was then divided, and the white patch in the pia mater exposed, and then, when the electrodes were applied, slight motion followed, but not so marked as before. The surface of the part was then dried by means of blotting paper, and the electrodes applied, but no motion followed. The sclerosed patch of pia mater was then removed, and the surface dried, but no motion followed the application of the electrodes.

If motion did not take place in the second series of experiments, it was not from lack of cortical substance, because the fibres below were found to be healthy when examined with the microscope.

It was then clear that the motion was not due to disturbance of the nerve-cells, nor to disturbance of the nerve-fibres, except those in close relation with the blood-vessels. Dr. Dupuy then undertook the examination of the structure of the brain-tissue and pia mater; and he had found that the only points in the cortical substance where motion could be produced by the application of an irritant, were those supplied by vessels which came from the pia mater, and dipped deep into the substance of the brain, and had nerve-fibres accompanying them. He be-

lieved, therefore, that there was a nervous connection between the pia mater and the fibres from the spinal cord which was continuous, and that motion was produced through that connection when an irritant was applied to the pia mater.—In the discussion which followed, Dr. J. W. S. Arnold, of New York, asked Dr. Dupuy what current he employed to stimulate the brain—the induced or the constant current, or the primary or secondary induced current? Dr. Dupuy replied that it made no difference with regard to the current employed. Dr. Arnold was so convinced the diffusion of the induced current was so great that its action could not be limited, whereas the constant current could be limited, and the exact point from which the action came could be determined. He had been able, by means of the constant current, to decompose brain-tissue to such an extent that motion in certain muscles or groups of muscles, in response to the electrical irritant, could not be reproduced; and that when such tissue had been examined microscopically, the structure had been found to be entirely changed. He had also found that when certain points in the brain, which seemed to have presiding power over definite sets of muscles, were destroyed by means of the constant current, motion could no longer be produced in response to the electrical irritant. The action of involuntary muscular fibres was slow, but the motions produced in response to an electrical irritant applied to the surface of the brain were instantaneous. He had records of movements following immediately upon the application of the irritant; and not only so, but that he had measured the difference in time which elapsed before motion was produced when the irritant was applied to the involuntary muscular fibres of the blood-vessels in the brain, and when it was applied to the cortical substance and gave rise to motion in the voluntary muscles in the limbs of the animal, and that there was a very appreciable difference in the length of time which elapsed before motion was produced in the two instances. In all his experiments, also, the brain-surface was kept free from moisture.—Dr. Jewell thought that, although Dr. Dupuy's paper was interesting with respect to the question of the mechanism by which the excitation led to the contraction, it did not militate greatly against the doctrine of localisation of function, but was simply another method of explaining how the contraction was brought about. If the contraction was due to a modification in the nutrition of the part irritated, that view was just as favourable as any other to the doctrine of localisation.

SHEPHERD ON ANATOMICAL ABNORMALITIES.—In a paper in the *Canada Medical and Surgical Journal* for August Dr. F. J. Shepherd, Demonstrator of Anatomy in the McGill Medical College, gives an account of anatomical abnormalities observed in the dissecting room during the winter session of 1875-76. The notes were taken on the spot from thirty-six bodies dissected. Dr. Shepherd does not describe all the variations which occurred, but only those which attracted most attention at the time.

Osseous System.—In one subject (a squaw) there were three floating ribs on each side.

Muscular System.—There was one example of the posterior belly of the digastric and the stylo-hyoid muscle passing under cover of the external carotid artery. This occurred on both sides of the same

subject. The stylo-hyoid muscle passing between the external and internal carotid is, Dr. Shepherd says, of no very great rarity, although it is stated in the *Guy's Hospital Reports* for 1868, that it did not occur once in 158 cases. He has never seen a case of the posterior belly of the digastric passing under cover of the external carotid recorded. In this subject the course of the external carotid was very superficial, in consequence of the variation. The pectoralis minor arose nearly as often from the second, third, and fourth ribs, as from the third, fourth, and fifth, and that the coracobrachialis muscle was only perforated by the musculo-cutaneous nerve in about two-thirds of the cases. No case of abnormality of the muscles of the back or face was noticed. In one subject (a Frenchman), the muscles of the face were developed in an extraordinary manner, so as to be easily dissected out by a first year's student. In this subject the platysma myoides was nearly as strongly developed as the corresponding muscle in the horse. In three examples, the biceps brachii arose by three heads, all occurring on the right side. In two of the cases the third head arose just below the insertion of the coraco-brachialis; in the third case, it arose between the two fleshy digitations of brachialis anticus muscle. In another case there was a slip given off from the biceps which joined the pronator radii teres muscle; this slip gave origin to the greater part of the bicipital fascia. There was one example of an extra extensor secundi internodii pollicis arising from the radius opposite the origin of the proper extensor secundi internodii pollicis. In this subject the origin of the extensor indicis was much more extensive than usual. In one example, a slip of muscle was given off from the extensor ossis metacarpi pollicis, and joined the abductor pollicis. In one case in which the palmaris longus was absent, there was absence of the gemellus superior on both sides in one subject. In one subject the gastrocnemius muscle of the left leg was most extraordinary in having its external head completely wanting. This occurred in a female. On dissecting off the integument and fascia of the left leg, the first thing that came into view was the little plantaris muscle. The usual point of origin of the outer head of the gastrocnemius was quite bare, the bone merely being covered by a little fat. The internal head was of the usual size. Dr. Shepherd believes the case to be quite unique. The muscles of the shoulder and hip were quite normal in all the subjects. In one subject there was a separation of about two inches at the insertion of the two recti abdominis muscles. They commenced to separate about the umbilicus. There were two examples of absence of the plantaris muscle, in each case occurring on the left side.

Arterial System.—In one case, the superior laryngeal artery arose directly from the external carotid instead of from the superior thyroid; it was about twice the usual size. The arch of the aorta was abnormal in one case only. In this case the left vertebral artery was given off directly from the arch. In the same body there was a thyroidea ima artery given off from the innominate.

There were four examples of high division of the brachial artery, all occurring on one side of the body only. In two, the division took place just below the insertion of the deltoid muscle. In a third, the division occurred in the latissimus dorsi muscle. The branch on the radial side afterwards became the ulnar by crossing the radial about the bend of the

elbow, and then continued on as usual. In the fourth case the artery given off on the ulnar side afterwards became the radial, by crossing the ulnar just above the bend of the elbow. In this case the radial recurrent artery was given off from the ulnar. There was one low division of the brachial, the division taking place at the lower border of the pronator radii teres muscle. In this case the ulnar artery was quite superficial throughout its whole course, and the interosseous, radial, and ulnar recurrent arteries were given off from the brachial. There was one example of a large median artery being given off from the brachial and accompanying the median nerve, supplying the same number of fingers ($3\frac{1}{2}$) as the median nerve, and taking the place of the ulnar in forming the superficial palmar arch; the ulnar artery in this case was smaller than usual, and accompanied the ulnar nerve, supplying the little finger and half the ring finger like it. The deep branch of the ulnar communicating with the deep palmar arch was given off as usual. This peculiar distribution of the arteries of the forearm and hand occurred on both sides in the same body. There were three examples of the obturator artery being given off from the deep epigastric. Two occurred on the right side and one on the left. The obturator artery in all three cases passed to the outer side of the femoral ring. In one case the obturator artery gave off a very large pubic branch; all three examples occurred in females. In four cases the external circumflex artery was given off from the superficial instead of the deep femoral; three cases occurred on one side only. There was one example of the peroneal artery forming the dorsalis pedis, and to a certain extent taking the place of the anterior tibial. This peroneal artery was of large size, and after supplying the peroneal muscles it pierced the interosseous membrane, and appeared on the front of the leg between the extensor proprius pollicis and extensor longus digitorum muscles, continuing on as the dorsalis pedis artery. In this case there was a small anterior tibial artery which supplied the anterior tibial muscles, and ended a little below the middle of the leg.

Nervous System.—There were two cases where the musculo-cutaneous nerve was given off from the median below the insertion of the coraco-brachialis, this muscle being supplied in the one case by a few filaments from the outer head of the median, and in the other by a special branch from the outer cord of the brachial plexus given off high up. In both cases the brachialis anticus and biceps muscles were supplied by the musculo-cutaneous nerve, as usual. There were two examples of the median nerve passing behind the brachial artery. There were seven cases where the great sciatic nerve divided high up; in all these cases the external popliteal nerve pierced the piriformis muscle. Three of these cases occurred in both sides of the same body.

Internal Organs.—There was one case of horse-shoe kidney. There were two examples of the descending colon having a meso-colon; in one case this meso-colon was about $1\frac{1}{2}$ inches long, and in the other (a squaw) the meso-colon was $3\frac{1}{2}$ inches; in this case the descending colon was about ten inches longer than usual. In both these cases, the peritoneum would have been wounded in the operation of colotomy. In three subjects (females) the sigmoid flexure of the colon was continued across, from about the middle of the iliac fossa on the left side, to the sacro-iliac synchondrosis of the right

side where the rectum commenced, and was normal for the rest of its extent, going from right to left, however, instead of from left to right. In two of these cases the lower transverse colon was two feet long. Several cases in which there was a meso-rectum were also noticed.

COUTY ON THE INFLUENCE OF CEREBRAL ANÆMIA ON THE CIRCULATION.—At the meeting of the Société de Biologie on August 5, M. Couty states that he had studied in M. Vulpian's laboratory the influence of cerebral anæmia on the cardiovascular functions. The following were the results of his researches. If the anæmia involved all parts, brain and mesocephalon there, were, 1. Considerable augmentation of the arterial tension, which was doubled and even in certain cases trebled; 2. Slowness of the pulse which, from 180 to 140 pulsations a minute, fell to 40 or 30.

After lasting some time, 8 to 10 minutes at least, these phenomena ceased, the tension falling even below the normal.

If the anæmia involved only the anterior parts of the brain, the heart's action became slow, but there was no notable and lasting variation in the arterial tension. The retardation of the heart itself was less considerable than in the case of general anæmia of the encephalon.

W. DOUGLAS HEMMING.

ROEHRIG ON THE PHYSIOLOGY OF MILK SECRETION.—Dr. A. Roehrig (Virchow's *Archiv*, May 1876) observes that the results of his experiments on the secretion of milk show that there is a constant relation between the blood-pressure in the gland and the quantity of milk secreted. His method included acting on the nerves supplying the tissues of the organ by section and galvanism, and the administration of drugs which act upon the vascular tonus, such as strychnine, digitaline, caffeine, jaborandi, all of which increased the secretion, and chloral-hydrate, which reduced it; and finally, by increasing the blood-pressure in a curarised animal by temporarily suspending respiration.

ARNDT ON THE SIGNIFICANCE OF THE MEDULLARY NERVE-SHEATHS.—Dr. Rudolf Arndt (Virchow's *Archiv*, May 1876) says that a comparison of the facts derived from anatomical observations, human and comparative, and the results of clinical and pathological investigations, shows that the development of the medullary sheaths stands in direct proportion to the activity of the nerve-fibre. In the lower animals and in the embryo, many nerve-fibres are naked, and the development of the medullary sheath takes place by the formation of small round cells (*Kugelchen*), which arrange themselves around the nerve-fibre, and finally melt together to form a homogeneous sheath, which thickens by additional concentrically formed layers. He considers its formation to be due to functional irritation.

ROBERT SAUNDBY, M.B.

RECENT PAPERS.

- On the Topography of the Brain, and on some points in the History of the Convolutions. By M. Broca. (*Le Mouvement Medical*, Aug. 12 and 19.)
The Development of the Genito-Urinary Organs. By M. Pouchet. (*Annales de Gynécologie*, August.)
On the Influence of Diminished Supply of Oxygen to the Tissues on the Decomposition of Albumen in the Animal Body. By Dr. A. Fraenkel. (Virchow's *Archiv*, Band lxxi. Heft 3.)
Experimental Researches on the Influence of Irritation of the

- Skin on the Secretion of Urine. By Dr. A. Von Wolkenstein. (*Centralblatt für die Medicin. Wissenschaften*, July 29.)
- On the Contraction and Innervation of the Spleen. By Dr. J. Bulgak. (*Ibid.* Aug. 12.)
- On the Polygraph. By Dr. E. Grussmach. (*Berliner Klinische Wochenschrift*, Aug. 14.)
- On the Physiology and Pathology of Singing. By Dr. J. Michael. (*Ibid.* Sept. 4 and 11.)
- The Ending of the Sensory Nerves in Man and Vertebrates. By Dr. Ditlevsen. (*Nordiskt Medicin. Arkiv*, vol. viii. part i.)

PATHOLOGY.

ESSENTIAL ANÆMIA.—The *Gazette des Hôpitaux* of July 18, reports a case of idiopathic anæmia, read before the Société Médicale des Hôpitaux, on the 14th, by M. Lépine. The patient was a woman, aged thirty-four, who, during her third pregnancy, began to suffer from diarrhœa and cough with mucous expectoration. She lost her appetite and colour, and her legs swelled. Soon after delivery, she presented a condition of extreme anæmia, without any sign of organic disease, though M. Lépine suspected the existence of cancer of the stomach. The diarrhœa was stopped by opiates, but the other symptoms increased. The number of red corpuscles, at first 909,000 in a cubic millimètre, continued to diminish, without any augmentation of leucocytes. [The number in health is over 4,000,000 per cubic millimètre.—*Rep.*] There were a systolic anæmic cardiac murmur, increasing pallor, anasarca and muscular weakness, with no pyrexia, no enlargement of spleen or lymph glands, no hæmorrhage or albuminuria. In less than two months after delivery the patient died. The number of red blood-disks per cubic millimètre, which had increased to 1,129,500, was 378,750 shortly before death, and the (vaginal) temperature was 34°·8° [94°·6° F.]

Except the fatty degeneration of the heart, usually found in these cases, and slight broncho-pneumonia, no lesion was found after death, and it is important to note that the marrow of the bones was examined, and found normal.

In the remarks on the case made by M. Lépine and other physicians present, reference was made to the cases published by Gusserow, Biermer, Immermann, Broadbent, and others, and also to the earlier observations of Addison and Wilks; but these seem to have been studied at second hand, for M. Lépine evidently does not know that this remarkable form of disease was accurately described by the late Dr. Addison, and distinguished from that to which his name has since been given. This fact has been fully stated by Dr. Wilks in the *Guy's Hospital Reports* for 1857 (p. 203), and by the present reporter in a paper in the sixty-fifth volume of *Virchow's Archiv*, and it only needs a reference to p. 212 of the Sydenham Society's edition of Addison's works to show how completely the symptoms and pathology of idiopathic anæmia are there described.

Some of the cases published by Lebert in 1858, mentioned in the July number of this journal (p. 291) may have been of the same nature, but he, like other observers, did not sufficiently distinguish essential or idiopathic anæmia from the various forms of chlorosis and symptomatic anæmia which occur in women. Trousseau's case (*Clinique Médicale*, tom. iii. p. 63), published in 1868, was contemporary with Biermer's paper, and preceded those of Gusserow

and Ponfick is also a doubtful one, and was not recognised by the eloquent lecturer as what is now called idiopathic or essential or progressive anæmia. —*Rep.* P. H. PYE-SMITH, M.D.

SEVESTRE ON RETROPERITONEAL CANCEROUS TUMOUR.—At a meeting of the Anatomical Society of Paris (*Le Progrès Médical*, August 19), Dr. A. Sevestre communicated the case of a woman, aged thirty-five, a sempstress, who was admitted into the Charité Hospital on October 29, 1875, on account of dyspeptic troubles and very severe pains in the epigastrium. The family history was unimportant. Until her marriage, at twenty-five years of age, she had always had good health; since that time she had suffered from pains in the stomach, beating of the heart, oppression, and scantiness of breath after running or much exertion, but the symptoms which troubled her most were troubles of the digestive organs, consisting of more or less acute pain after meals and a slowness of digestion.

On her admission, the patient complained almost exclusively of pains occupying the lumbar region and the abdomen, especially about the level of the umbilicus and epigastrium. The pains were compared to sensations of burning, tearing, and gnawing; from the loins and epigastrium they radiated towards the pelvis and the flanks, and in the other direction towards the thorax and neck. The pains were continuous, but there were occasional exacerbations of a very violent character, which coincided neither with a meal nor with any other appreciable cause: they existed during the night, and disturbed rest. Pressure did not increase them, nor were there any neuralgic points.

The appetite, though diminished, was not destroyed; digestion proceeded slowly, and the ingestion of food was followed by a sensation of weight and fulness, which lasted for some hours. There was no vomiting nor nausea. The tongue was scarlet, denuded of epithelium; the papillæ were very prominent; the passage of hot or irritating food caused a strong burning sensation. The stools were scanty, and the patient had for some time suffered from troublesome constipation. The belly was somewhat inflated, and palpation revealed, at the level of the epigastrium, in a horizontal line, and separated by an interval of two or three fingers' breadth, three tumours of the shape and size of a large chestnut; these tumours were indolent. The other functions were natural. The patient was thin, but maintained her colour, and had not the cachectic appearance usual in organic affections.

The patient succumbed on February 18, 1876. She had never had œdema.

On opening the abdomen, and removing the stomach and intestines, a tumour was found lying in front of the vertebral column, and extending between the stomach, transverse colon and spleen. From the anterior aspect of the tumour, fibrous bands passed to the different organs of the abdomen; at one point these adhesions assumed the form of a resisting bridle which passed from above downwards and from before backwards round the front of the colon, and caused considerable contraction. This band being divided, the wall of the intestines bulged out, and no further alteration was found in it. The same was the case with other parts of the intestine which at certain points had slight adhesion. The stomach was intimately attached to the tumour to the size of the palm of the hand about the middle of

its posterior aspect. The mucous membrane appeared healthy to the naked eye. The pancreas was entirely mixed up with the tumour, and could not be isolated; its situation could be determined only by some yellowish spots disseminated in the fibrous tissue, in which the microscope showed granulations without recognisable cells. The spleen at its internal aspect was firmly adherent to the morbid growth. Externally, there was only thickening of the capsule. The left kidney, at the root of the hilus, was also mixed up with the tumour. The right kidney was healthy. The liver was of normal size; on its anterior surface were three nodules of the size of a walnut, presenting all the appearances of cancer. The bile-duct and ductus communis were slightly dilated and filled with bile, but not obstructed. The uterus and genital organs were healthy.

On section the tumour presented an extremely clear fibrous appearance with lose and thin yellowish points; its tissue was extremely hard, creaked under the knife and showed no points of softening; a moderately abundant juice exuded on scraping. The microscope revealed cells of variable form and size, generally rounded and oval, rather larger than white corpuscles and having large nuclei provided mostly with a shining nucleolus. The arteries traversing the tumour were little altered; the corresponding vein however, and particularly the splenic vein, were obstructed. The lymphatic vessels and glands were lost in the tumour, so that it was impossible to find traces of them. Histological examination after hardening showed the tumour to be composed of a fibrous carcinoma. The alveoli were filled with the cellular elements above described and the trabeculae, very thick, were formed by a very dense fibrous tissue in the midst of which, here and there, were traces of fatty tissue. The morbid tissue would appear to have its origin in the subperitoneal connective tissue. The tumours of the liver and spleen were composed of carcinoma with large alveoli separated by very thin partitions.

The above case appears to be an example of a rare and little known lesion, described by Lobstein as retro-peritoneal cancerous tumour, and by Bayle and Cayol as abdominal cancerous masses. Developed in the subperitoneal cellular tissue in front of the vertebral column, these tumours increase towards the anterior region of the abdomen.

They may be situated in different parts of the cavity; more often they occupy the superior part and may simulate cancer of the stomach; or they may have their origin in the pelvis and interfere more or less with the functions of the organs therein. Histologically this constitution varies much. The various kind of carcinoma or sarcoma may occur; there may be cysts or the tissue may undergo softening and be the seat of hæmorrhage.

LAURENT ON FIBRO-MYOMATA OF THE KIDNEY AND FIBROUS TUMOUR OF THE UTERUS IN A WOMAN WHO DIED FROM SENILE GANGRENE.—At a meeting of the Anatomical Society of Paris (*Progrès Médical*, August 19), M. A. Laurent exhibited two specimens taken from a woman seventy-five years of age, who died from senile gangrene under the care of M. Charcot. At the necropsy, each kidney was found studded with small ovoid hard bodies, about the size of a lentil, situated between the parenchyma of the kidney and its capsule; removal of the cortex showed that these little lenticular bodies were inseparable from the

capsule, and were not adherent to the substance of the kidney, which in other respects was perfectly healthy. The patient had never shown any uræmic symptoms. A section coloured with picrocarminate plainly showed the muscular element, and made it evident that there were fibro-myomata. The uterus, on examination, was found very large, knotted, hardened in all parts except the neck, which was intact. Section in all directions showed a score of interstitial fibrous bodies, varying in volume from that of a walnut to that of a hazel-nut. One of these tumours, larger than the others, and having a diameter of four or five centimètres, occupied the posterior wall. The uterine cavity was reduced almost to nothing.

W. DOUGLAS HEMMING.

FRONMÜLLER ON TWO CASES OF IDIOPATHIC CANCER OF THE KIDNEYS.—Dr. G. Fronmüller, senr. (Betz's *Memorabilien*, Jahrgang xxi. Heft 4), says that a magistrate of his acquaintance was in the habit, about a year before his death, of pressing his left hand, or rather fist, on the lumbar region in walking, and also in standing. When asked why he adopted so remarkable a gesture, he said that it relieved a peculiar pain he felt there. The chief complaints from which he then suffered, being in his sixty-second year, and a strongly built man, were attacks of rheumatism, and particularly periodic attacks of dyspnoea, the latter was often extreme, in consequence of a fatty heart. In one of these attacks he suddenly and unexpectedly died. The lumbar pain had been supposed to be rheumatic, or due to hæmorrhoids. His urine was often examined, and nothing abnormal was discovered in it, perhaps because at that time the cancer had not invaded the pelvis of the kidney. At the *post mortem* examination, the heart was found large, both its ventricles dilated, and its muscular structure was flabby, and had undergone fatty degeneration. The commencement of the aorta was dilated; the liver was hyperæmic and fatty. The left kidney was somewhat enlarged, and contained a mass rather bigger than a pigeon's egg, growing from the cortical substance of one side into the kidney-fat, and on the other side extending into the pelvis of the kidney; resembling, when cut into, medullary sarcoma (*Markschwamm*). The right kidney was normal, and there was no other trace of carcinoma in the body. Two years ago, the same observer met with another case of cancer of the kidney, of far larger size, in the person of a weaver, aged fifty-six years, who was admitted into the hospital with some oedema of the feet, slight pain in the loins, and some not very severe constitutional symptoms. The urine contained neither albumen nor anything else abnormal. After a fortnight the oedema had vanished, and the pain in the loins was almost gone. At his own request he was discharged as 'relieved.' Six days afterwards he was again brought back to the institution. He had been attacked with extreme weakness and tendency to fall, much meteorism, and slight ascites; the left loin had become prominent, there was moderate oedema of the feet, and some pyrexia. The rapid development of these symptoms seemed difficult to explain, and they were attributed to retention of feces, etc. Early next morning the patient died. At the *post mortem* examination the lungs were found to be healthy, the heart somewhat enlarged, and the subject of fatty degeneration. The liver had also become fatty. The spleen was

small and flaccid. The left kidney was enlarged to five times its normal bulk, and was full of nodules of medullary cancer. The adjacent parts of the peritoneum and great omentum had similar nodules of soft fibrillated cancer. The rest of the body appeared healthy.

LOTZE ON A FATAL CASE OF JAUNDICE DUE TO CONGENITAL MALFORMATION OF BILE-DUCTS.—No. 30 of the *Berliner Klinische Wochenschrift*, July 24, 1876, contains the following case, reported by Dr. Konrad Lotze, of Osterode. He remarks that similar cases are rare, and that he has been unable to find one quite analogous.* The child referred to had a very delicate, anæmic, and strumous mother. The father (a master-mason) was strong and healthy. During the first three weeks of life the infant's skin had a slight yellowish tinge. There had also been slight diarrhoea. The icterode condition soon deepened into intense jaundice. At 3½ months of age, the child was much wasted, the skin was a deep yellow, flabby, and shrivelled, the conjunctivæ were of an olive green tint. The urine was turbid, greenish yellow, and contained fat, with much bile-pigment. The fæces were yellowish green. The liver was considerably enlarged. There was no special somnolence, fever, or retardation of pulse. The appetite and digestion seemed fairly good, though the child did not thrive. The stools were never colourless till about a week before death. The child lived till the eighth month, and then died after a few days of broncho-pneumonia, having shown slight oedema of the feet and hands during this last illness. From peculiar circumstances, only the liver was examined. It was much enlarged, had sharp edges, and was almost cartilaginous in hardness. The peritoneum covering it was adherent. The surface was dry, dull, and granular from prominent greyish-green elevations, about the size of pin's heads. On section the parenchyma was green, the vessels appeared as yellowish-grey cords of almost cicatricial hardness; and dark green bile flowed freely on section. All the biliary passages were narrower than normal. The common bile-duct was pervious, but very narrow. Only the right hepatic duct could be followed for any distance into the liver. The left hepatic duct was obliterated very soon after it entered the liver, its place being taken by strings or cords of greyish connective tissue which accompanied the portal vessels. The cystic duct was entirely absent. The gall-bladder was in its normal situation, but had become adherent to the under surface of the liver by very firm fine connective tissue. It was flaccid, only partially filled, was of whitish-grey colour, and contained clear, thin faintly acid mucus. On laying the gall-bladder open no outlet was discoverable. The cystic duct was replaced by solid thin whitish strings, which were interspersed with some soft, round, solid dark green bodies (apparently lymphatic glands). The blood-vessels of the liver appeared normal. The ligamentum teres admitted a stout probe as far as the portal vein. The ductus venosus was imperfectly

closed. Microscopic examination showed the liver changes to be cirrhotic. Dr. Lotze considers this to be a case of intrauterine perihepatitis—possibly due to congenital syphilis (although this seemed very problematic, the father's history only revealing an ulcer of doubtful character three years before). This had probably prevented the proper development of the bile-ducts.

W. BATHURST WOODMAN.

SANGALLI ON THE CONDITIONS OBSERVED IN THREE CASES OF ABSENCE OF KIDNEY.—In 5,348 necropsies Professor Sangalli (*Rendiconto del Reale Istituto Lombardo*, vol. ix. and *Lo Sperimentale*, August, 1876) met with the following anomalies in the kidneys.

Displacement of one kidney, seven cases; Displacement and union of both kidneys, one; Displacement of the left kidney with excessive development of the suprarenal capsule, which, remaining in its proper position, suggested the idea of a double kidney on the left side, one; Simple union of the kidneys at the lower part, three; Union of the two kidneys with abnormal division of the renal substance, so as to give the appearance of five kidneys each provided with its own pelvis (the five pelvises being found reducible to two), one; Double ureter on one side, the other being normal, one; Double ureter on both sides, one; Congenital atrophy of one kidney in an adult in whom the toes were absent.

Of the seven cases of unilateral ectopia, four were on the right side and three on the left. The displaced kidney lay either on the last lumbar vertebrae, or on the promontory of sacrum, in the small pelvis. In none of the cases had there been any complaint of inconvenience; in one, however, there was an excessively developed suprarenal capsule on the same side. Dr. Sangalli observes that these cases of displaced kidney are of importance with reference to the diagnosis of enlarged spleen. As regarded sex, the numbers were nearly equal.

Absence of the kidney was found in three cases, all males, among the 5,348. All the individuals were otherwise well formed and had been of ordinarily robust constitution. They died of diseases having no relation to the anomaly of the kidneys; one (aged twenty-five) of metastatic (pyæmic) abscess of the liver after a wound of the head; another (aged forty-nine) of rheumatic pleuro-pneumonia and consecutive meningitis; the third (aged forty-six) of phlegmonous erysipelas of the right hip, with metastatic peritonitis and pleurisy, and albuminous nephritis. In one case the right kidney was wanting; in two, the left. In the first case, the remaining kidney appeared to be simply hypertrophied to twice the natural size, and in the second, it was increased through hypertrophy by about one-third, and was affected with incipient albuminous nephritis; in the third, the kidney was enlarged by about one-half by hypertrophy and by chronic albuminous nephritis. In each of the cases, the kidney occupied the usual position, and the ureter was normal.

The suprarenal capsule was present in its normal position on both sides in each of the three cases; in one case it was larger on the side where the kidney was absent than on the other.

In addition to the absence of the kidney—of which no trace could be found in these three cases—the vesicula seminalis and ejaculatory duct on the same side were wanting, although both testes were perfect.

* Dr. Lotze gives the following references:—Virchow's *Archiv*, Bd. 35, p. 360; Binz, 'Zur Kenntniss des tödtlich Icterus der Neugeborenen aus Obliteration der Gallenwege,' *Ibid.*, Bd. 43, p. 296. Roth, 'Congenitaler Defect der grossen Gallengänge,' *Archiv der Heilkunde*, Bd. 11, 1874; Schüppel, 'Ueber Perityphlitis bei Neugeborenen,' quoted in Gerhardt, *Kinderkrankheiten*, 3 Aufl. *Transactions of the Pathological Society*, vol. xxxiii., p. 152; Nunneley, 'Congenital Obliteration of the Hepatic Ducts.'

This anomaly, Dr. Sangalli says, has not been described by others. On endeavouring to ascertain what became of the semen secreted on the side where the defect existed, Dr. Sangalli found in one of these cases that, on the side where the kidney was present, the vas deferens was normal in size and course; but at the other (left) side it was slender, and, after entering the pelvis beneath the fundus of the bladder, passed obliquely to join the right spermatic vesicle, into the vas deferens of which it opened about a centimètre from the point of entrance of the right ureter into the bladder.

PIPPINGSKÖLD ON SUBPUBIC EXTROPHY OF THE BLADDER IN A GIRL.—The case is described by J. Pippingsköld (*Finska läkaresällskap. förhandling.* Band xvii.; and *Nordiskt Medicin. Arkiv*, Band viii.) A girl aged thirteen, who had not yet menstruated, suffered from nocturnal enuresis, and in the day time could not retain her urine for more than an hour and a-half at a time; it hence was frequently discharged in a rapid stream. On examination, the anterior wall of the abdomen was found to be normal, and the symphysis pubis closed, of normal height, but broader than usual. In the situation of the mons Veneris was a vertical cleft two centimètres wide and one deep, which led downwards and backwards into an opening more than a centimètre wide, in which the mucous membrane of the bladder was visible. The opening was bounded on the two sides by the nearly parallel halves of the clitoris. Of the urethra, there was only a short rudiment of the posterior wall; the whole anterior wall was wanting. The glans clitoridis lay one-and-a-half centimètres above the urethro-vaginal septum; the labia majora were fully developed, the fossa navicularis was absent. Two separate operations were performed without result.

PIPPINGSKÖLD ON CONGENITAL STENOSIS OF THE COLON AND ILEUM.—In a new-born child, which at the end of the first twenty-four hours was attacked with vomiting, which continued until its death on the seventh day after birth, J. Pippingsköld (*Finska läkaresällsk. förhand.* Band xvii., and *Nordiskt Medicin. Arkiv*, Band viii.) found the following appearances. The rectum was fully formed as regarded both length and width; but the colon for about fifteen inches was no thicker than a large goose-quill, and contained no meconium. The cæcum, which was somewhat larger, was empty: the vermiform appendix was five centimètres (two inches) long. The lower part of the ileum for about two inches from the cæcum was of the size of a small goose-quill. Beyond this, there was apparently a complete defect of intestine; but, on searching along the free edge of the mesentery, there was found a rudimentary bowel from one to two millimètres in thickness; it had no evident lumen, but passed into an enormously distended small intestine.

TIBALDI ON JAUNDICE FROM ATRESIA OF THE BILE-DUCT THROUGH CIRRHOSIS OF THE HEAD OF THE PANCREAS.—In the *Annali Universali di Medicina e Chirurgia* for June, 1876, Dr. Tibaldi describes a case of a married woman, aged thirty-five, who had enjoyed good health up to two months before she was first seen. She had gradually become jaundiced, and had some oppression and pain in the epigastrium and right hypochondrium, with much loss of appetite; she occasionally had slight fever. On examination Dr. Tibaldi found the liver enlarged

and resistant; the gall-bladder distended, and reaching as far as the umbilicus; the spleen enlarged and resistant, and extending as far as the left iliac region; tympanitic abdomen; regular discharge of colourless pieces; urine scanty, of a yellow-green colour; the skin yellow and itching; the impulse and sounds of the heart indistinct; the pulse weak and slow, intermitting at every tenth beat. There was plainly icterus form, suppression of the flow of bile. At the necropsy the head of the pancreas was found enlarged to double its normal size, with a mass of puriform matter in its centre, and the bile-duct was atrophied for some distance from its point of entrance into the duodenum. Dr. Achilles Visconti found, on histological examination, hyperplasia of the interstitial connective tissue, with pyoid globules and cells of cylindrical epithelium in the pancreatic duct mixed with mucus, without any trace of cancerous formation. A. HENRY, M.D.

RECENT PAPERS.

- On Biliary Fistula. By M. Charcot. (*Le Progrès Médical*, Aug. 12.)
- On Primary Cancer of the Biliary Ducts, and Cancer of the Head of the Pancreas. By M. Charcot. (*Ibid.* Aug. 19.)
- General Remarks on the Pathological Anatomy of Cirrhosis. By M. Charcot. (*Ibid.*, Aug. 26.)
- Case of Cancer of the Stomach in a Woman aged twenty-five. By M. Audibert. (*Lyon Médical*, Aug. 13.)
- A New View of the Pathology of so-called Phlebitis. By Dr. C. A. Nancrede. (*Philadelphia Medical Times*, Aug. 19.)
- Description of a Monstrous Human Foetus. By M. Nitot. (*Annales de Gynécologie*, Aug.)
- On Changes in the Brain and Cardiac Ganglia in Hydrophobia. By Dr. Wassilieff. (*Centralblatt für die Medicin. Wissensch.*, Sep. 2.)
- A Case of Inversion of the Viscera. By Dr. G. Fritsche. (*Berliner Klinische Wochenschrift*, Aug. 21.)
- A Case of Myxoma of the Membranes of the Spinal Cord. By Dr. Pel. (*Ibid.* Aug. 7.)
- Changes in the Form of the Red Blood-Corpuscles in Acute Yellow Atrophy of the Liver. By Dr. Matterstock. (*Wiener Medizinische Wochenschrift*, Sept. 2 and 9.)

MEDICINE.

MARTEN ON TWO NEW SYMPTOMS OF ADHESIONS OF THE PLEURÆ.—Dr. Marten, of Hörde, writes as follows in no. 30 of the *Berliner Klinische Wochenschrift*, July 24, 1876. 'On March 27, 1875, I was suddenly taken ill, having previously had no other symptoms of illness, except that some weeks before the pulse had been intermittent. There was, however, no organic disease of the heart, and I had continued my professional work. Now, however, I was suddenly seized with most acute pleuro-pneumonia of the left side. The whole of the left lung became quickly hepatized. There was, however, no great amount of pleuritic exudation. After five days, the crisis occurred, the treatment being wine, with morphia at night, partly on account of a distressing and convulsive cough, which gave me no rest at night unless I took the opiate. The next trouble was an alarming amount of meteorism, by which the diaphragm was pushed up beyond the line of the nipples. By the use of purgatives, this subsided in a few days. The upper lobe of the right lung was attacked on April 10, but fortunately the symptoms vanished in twenty-four hours. From this time forward, convalescence, though tedious, was unin-

interrupted, and six weeks' Alpine air rendered me fit for my work again, the only subjective symptom of my illness being a little unusual excitability, and the only objective one some slight thickening of the pleura at the left base. There were, however, two symptoms, which I consider worth recording, as they do not appear to have been previously noticed. They were, however, quite obvious to my medical attendants, and those around me, as well as to myself. They can also be easily explained. After lasting three months, they are now gradually disappearing. When the volume of the stomach underwent any change, as just before, during, and after a meal, there were frequently repeated, spasmodic, and rather painful, contractions of the upper part of the gullet and pharynx, a sort of wind-swallowing (*blindesschlucken*), which would last for some seconds, rendering both eating and speaking impossible. Not only did I feel these, but others could clearly see them. No doubt the mechanism was, that any sudden change in the size of the stomach, the diaphragm perhaps assisting, perhaps being only passive, caused the adhesions of the pleura to the œsophagus to be put on the stretch; thus setting up the contractions of the upper part of the alimentary tube which I felt and others saw.

'It is well known that recent inflammatory adhesions of the pleurae to the lung, give rise, for a long time after, to pain in sneezing and coughing, these acts putting them on the stretch. The bystanders will notice that the patient presses his hand against the corresponding ribs.

'The second symptom, though less easy to explain, was still more manifest than the spastic contractions of the constrictor muscles of the pharynx mentioned above. This symptom was as follows. If breathing had become superficial or shallow for a short time, through the body and mind being both at rest, which most commonly happened in bed, before going to sleep, a noisy deep inspiration suddenly took place, with a jerk, which could be seen, felt, and heard, and this kind of thing went on at intervals of a few minutes several times before sleeping. It never occurred in the mornings; always under the circumstances described, and always on the left side. It might be called a one-sided yawn, and might probably be due to the same cause: only, as the pretty extensive adhesions of the pleura on the left side caused less perfect expansion of the left thorax, this was probably compensated by a sudden and irresistible contraction of the diaphragm, which was assisted by a more powerful, visible, and audible expansion of the left hypochondrium.'

[The reporter thinks it possible the pneumonia had a good deal to do with the last symptom, which seems only an exaggeration of the action induced by the stimulus of what M. Bourdon in his '*Recherches sur le Mécanisme de la Respiration*,' calls by the appropriate name of the '*besoin de respirer*.' In relation to this partial suspension, Dr. Carpenter says: 'If, however, we endeavour to prolong the suspension, the stimulus conveyed by the excitator nerves to the medulla oblongata becomes too strong, and we cannot avoid making inspiratory efforts; and if the suspension be still further prolonged the whole body becomes agitated by movements which are almost of a convulsive nature, and no effort of the will can then prevent the ingress of air.' ('*Principles of Human Physiology*,' 7th ed. p. 329; see also his remarks on breathing in sleep, and on sighing.) However, be the interpretation as it may, these

observations, if less novel than Dr. Marten thinks, are of great interest, particularly on account of the length of time during which they persisted.—*Ref.*]

WEISS ON THE OPERATIVE TREATMENT AND RAPID RECOVERY OF A CASE OF EMPYEMA DISCHARGING ITSELF THROUGH THE LUNG.—Staff-Surgeon Dr. Weiss reports the following case in *Betz's Memorabilien*, xxi. Jahrgang, Heft 6, s. 261. C. V., twenty-one years of age, weighed 124 pounds on November 3rd last. The circumference of his chest was 36 to 37½ inches, and his lungs had a vital capacity of 213 cubic inches. On January 25 of this year, he was attacked with pleuro-pneumonia of the left side. The symptoms of pulmonary inflammation subsided, along with a fall of temperature; and on February 4, the latter was 101·66° Fahr. The pyrexia did not, however, entirely leave him, and on February 7, the thermometer marked 102·92° Fahr., whilst simultaneously the pleuritic symptoms, which had previously played a subordinate part, began to attract attention. The rise of temperature continued in spite of antipyretic treatment, so that his evening temperature averaged 102·74° Fahr.; and on the 28th instant amounted to 104° Fahr. On this day, the patient, whose sputa, since the subsidence of the pneumonia had consisted of frothy mucus, discharged a great quality of creamy, yellow, odourless pus—filling five common drinking glasses. This was accompanied with a most tormenting cough, and attacks which seemed to threaten him with suffocation. Dr. Weiss did not see him either on this or the two next days. On March 2, he brought up three more tumblers of similar fluid in the forenoon, and appeared extremely weak and exhausted. As there could be but little doubt that the diagnosis must be 'discharge of an empyema through the lung,' as moreover the cough threatened complete exhaustion, and as the prognosis of such cases, when left to nature, is seldom favourable, Dr. Weiss, on March 3, did paracentesis thoracis by Lister's (antiseptic) method, in the left axillary line between the seventh and eighth ribs; making a free incision, and afterwards washing out the cavity with a solution of salicylic acid. Nearly sixteen ounces of pus were thus removed. One of Kussmaul's catheters was connected with an irrigator, in order to do the washing out. The patient was momentarily much distressed, the cough and dyspnoea being greatly increased at first. The sputa tasted of salicylic acid. Jute impregnated with the same acid was used as a compress. As soon as this bandage was applied, all the symptoms of irritation ceased, and the patient enjoyed a degree of rest to which he had been a stranger for some days. The chest was washed out with the same fluid, at first daily, then every other day, till the quantity of pus became so small that it could be conveniently coughed up. This washing out always excited cough and distress, which, however, very quickly subsided. On April 2 the wound was quite healed, and from this time the sputa became daily less purulent and more mucous, till they ceased eight days after the healing of the wound. From this date he might be considered as convalescent. On May 6, he was found to weigh 128 pounds; the circumference of his chest was 36½ to 37½ inches; and the vital capacity of his lungs was found to be 171 inches. This diminished vital capacity (it had been 213 cubic inches before) was partly explained by slight emphysema of the right lung, and partly by the still imperfect expansion of the left lung.

JACOBS ON RECOVERY FROM EMPYEMA AFTER SPONTANEOUS EXTERNAL OPENING (*Paracentesis per Necessitatem* of old writers).—Dr. Jacobs, of Cologne, reports the following in the *Deutsche Medicinische Wochenschrift* for August 5, 1876. M. K., aged twenty-three, a consumptive-looking girl, was suddenly attacked with inflammation of the lungs, accompanied with suppression of the catamenia. Her pneumonia apparently terminated in suppuration. The treatment pursued was very varied, as she had several doctors. Dr. Jacobs first saw her in the sixth week of her illness. She was much emaciated, had very offensive purulent sputa, and suffered from fever with morning remissions. The exacerbations or febrile paroxysms were sometimes in the afternoon, sometimes at night. Her average temperatures were about 38°·2 Cent. in the morning, 38°·5 Cent. in the afternoon, and 39° or 40° Cent. in the evening (or 100°·6, 101°·3, and 102°·2 to 104° Fahr.). Her pulse was never less than 100, and often rose to 140 at night. There were repeated rigors. The afternoon and evening elevations of temperature were generally followed by perspirations. She complained of want of appetite, shortness of breath, weakness, and sleeplessness. Mucous râles could be heard on the right side by the unassisted ear. On the right side, from the third to the sixth rib in the anterior axillary line, there was dulness on percussion, and auscultation revealed mucous râles, metallic tinkling, and pectoriloquy. The mucous râles were too loud to permit any vesicular breathing to be heard at this spot. Dr. Jacobs diagnosed a vomica and empyema as a consequence of caseous pneumonia. The course of the disease indicated pleuro-pneumonia (there had been rusty sputa). The constitution, prominent clavicles, and the shape of the thorax all rendered tubercle probable. Quinine in large and small doses seemed to have no particular effect on either temperature or pulse. Morphine and chloral-hydrate by mouth and subcutaneously relieved her cough, and procured more tranquil nights. Her increasing fever, loss of strength, want of appetite, increasing pulmonary mischief, and aggravated dyspnoea, all appeared to indicate death from exhaustion to be imminent, when she called attention to a slight swelling between the fourth and fifth ribs on the right side in the axillary line. It had the form and about the size of a walnut, was brownish red, soft, and tender on pressure. Oiled linseed poultices were ordered as it was intended to open the swelling next day. Being unable to visit her for two days, Dr. Jacobs found on the third day that the 'abscess' had broken, discharging a large quantity of thin, whitish, bad smelling pus. From this time the cough, expectoration, and fever gradually decreased. The treatment was chiefly tonic, with local use of poultices, drainage-tubes, etc.; and in three months the opening was closed. The patient recovered; and although it is two years ago, has not relapsed. Her case thus contrasts favourably with that of Dr. Von Nelsen, aged about fifty, also treated by Dr. Jacobs. In his case there appeared to be a communication between an empyema due to pleuro-pneumonia, and one of the large bronchi (as in the case reported by Dr. Weiss in Betz's *Memorabilien*, xxi. Jahrgang, Heft 6). Great dyspnoea and much cyanosis led Dr. Jacobs to do thoracocentesis, and an immense quantity of whitish stinking pus escaped. The opening closed after two months; but in four weeks' time it broke open again, and a probe revealed caries

of the fifth and sixth ribs. This fistula remained open, and the patient died of phthisis in about six months. Dr. Jacobs, in commenting on these cases, remarks on the comparative safety of puncture by the aspirator. Yet he thinks that in some cases, a free opening with the knife, such as Ewald recommends in the new *Charité Annalen*, is equally safe, and more desirable for some reasons. A review of Ewald's cases will be found in nos. 6 and 7 of the *Deutsche Medicinische Wochenschrift* for this year. [See also LONDON MEDICAL RECORD for July, page 324.] W. BATHURST WOODMAN.

MILES ON A CASE OF CEREBRAL HÆMORRHAGE AND HEMIPLEGIA.—At a meeting of the American Neurological Society (*New York Medical Record*, July 15), Dr. F. T. Miles of Baltimore related a case which was interesting, from the fact that the injury of the brain in a particular locality was connected with the exact symptoms observed before the death of the patient. The brain-injury in this instance occurred in an eminent lawyer who, at the time the symptoms were first developed, was cross-examining a witness. A fac-simile of his handwriting was exhibited, and it could be seen exactly where irregularities in the outline of the letters began to show themselves. From that point the chirography grew more and more illegible, until finally a mere blot was made. The gentleman then rising to address the court, it was perceived that something was wrong with him, and he was removed from the room. He became semi-comatose, had complete right hemiplegia, the right side of the face was completely paralysed, and ptosis of the left eye was strongly marked. The tongue was not paralysed, but the patient was unable to thrust it out, and there was no paralysis of the muscles of deglutition. There was some anæsthesia upon the affected side. The patient answered all questions affirmatively. The eyes could be made to follow the finger only as far as the median line to the right, when they would stop, and the patient would carry them over to the left side. The case terminated in the usual deep coma and death. Dr. Miles had diagnosticated crural hæmorrhage, producing ptosis, with paralysis upon the opposite side. At the necropsy, a mass of blood which had so flattened the convolutions, that it could be easily seen beneath the surface, was found in the central portion of the middle lobe of the brain upon the left side. When the sac was opened, the first blood that escaped was fluid; then came a jelly-like mass; and, lastly, a hard clot, not easily broken up, which was probably the original clot that gave rise to the first symptoms. The clot did not break through into the ventricles, but remained enclosed in the substance of the third lobe. Dr. Miles referred to a case in which an abscess was found in the region occupied by the original clot in the case being described, but in which there was no motor paralysis. In the present instance, the necropsy proved that the diagnosis was incorrect, because there was no hæmorrhage into the crus. The symptoms, therefore, were explained by the double influence produced by the destruction of brain-substance, and pressure upon the surrounding parts; and that it was the pressure upon the crus and the third nerve that gave rise to the eye-symptoms.—Dr. Jewell remarked that the fact of the symptoms in Dr. Miles's case being due to pressure produced upon parts outside of the real lesion, showed how easily mistakes could be made with reference to diagnosis and pro-

gnosis.—Dr. Hammond inquired with reference to dilatation of the pupil and strabismus.—Dr. Miles replied that there was no special dilatation of the pupils, and that he did not observe any strabismus.—Dr. Hammond, from those facts, was inclined to regard the ptosis as entirely independent of intracranial trouble. He did not regard the case as one of cross-paralysis, but that the ptosis depended upon some orbital lesion.—Dr. Seguin directed attention to one symptom in Dr. Miles's case which would cast a doubt upon the diagnosis of affection of the crus—namely, the eye symptom. The fact that the patient could not be induced to turn the eye beyond the median line to the right, and tended to look to the left, was in obedience to what occurs in lesions of the hemispheres and not in lesions of the crus. From that fact alone he would have been led to believe that the lesion was not limited to the crus.

STREETS ON A CASE OF NATURAL CATALEPSY.—In the *American Journal of the Medical Sciences* for July, Dr. T. H. Streets narrates a case of catalepsy, which came under his notice in a sailor, named Thomas Lakin, in the American navy. Previous to shipping in the government service, the man, who had been healthy, had been employed on a steam-boat on the bay of San Francisco. While there, a boiler explosion took place, and the boat was blown in pieces. He stated that he received no injury at all from the accident, that he was not struck by any of the flying missiles, nor scalded by the steam, but that he was projected into the water by the force of the explosion.

Some time after this occurrence (probably somewhat less than two months), he began to experience a prickling sensation in the region of the occiput. After his enlistment in the service of the government, more than a year after the date of the explosion, he became subject to fits of unconsciousness. The first attack occurred while he was away from the ship, and while he was on duty in a small boat taking soundings. It was the patient's duty to heave the lead. The officer on duty noticed that he was neglecting his business, and spoke to him in consequence, but received no response. He was in the attitude which he had assumed in the act of heaving the lead—the left foot planted in advance, the body leaning slightly forward, the right arm extended, and the line held in the left hand. The fingers were partially flexed, and the sounding line was paying out through them in this half-closed condition. The eyes were moving about in a kind of wandering gaze, as in one lost in thought. So much like his natural self did he appear, that his officer again spoke to him, and this time rather harshly, under the impression that he was disregarding his orders intentionally. He remained standing in this posture for two or three minutes, and maintained his equilibrium, and the boat was in no wise perfectly steady at the time. The whole duration of the trance was about five minutes.

After this he had a number of attacks, but none of them were longer in duration than the first; sometimes they lasted no longer than one or two minutes. Most of them occurred while he was away from the ship. They did not incapacitate him for duty, but some apprehension was felt lest he should fall overboard, and for this reason he was closely watched.

The only premonition he ever had of the approach of an attack was a sense of suffocation, or an inability to breathe. This did not always precede an

attack; he experienced the sensation but once just before lapsing into unconsciousness; generally they came on without any warning whatever. Once he felt sick at the stomach immediately after he recovered consciousness, but, as a rule, they left him as well as they found him, and he would take up his work just where he had left off, as if nothing at all had happened. No symptoms of nervous derangement were noticeable in the case. As the disease progressed, they assumed more and more an epileptic character, and before he passed out of Dr. Streets' care entirely, the catalepsy had become converted into well-marked epilepsy.

The patient had been granted forty-eight hours liberty on shore, and during that time he had partaken rather freely of alcoholic liquors, but he was not drunk. He reported himself on board the ship promptly at the expiration of his leave of absence, and he had been aboard but a very short while when Dr. Streets was called upon to see him in a fit. The loss of consciousness in this instance was accompanied by a complete loss of muscular control, and he had fallen to the deck. The face had a livid, cyanosed appearance, and the eyes were fixed and staring, but there were no convulsive movements of the muscles, nor foaming at the mouth. The manner of recovery was also similar to that observed in the cases of 'petit mal' of the French; he presented the same dazed, confused appearance, like one who has been suddenly awakened from a sound sleep. This attack occurred about six months after the manifestation of the first morbid symptoms. There was no history of epilepsy in his family that Dr. Streets could learn.

At this stage the case passed out of Dr. Streets' care and sight entirely, in consequence of his being ordered to duty elsewhere.

Bromide of potassium in twenty-grain doses, given twice daily at first, and afterwards reduced to once daily, given at night, controlled the paroxysms completely, but directly this medicine was discontinued they would recur.

DÉJÉRINE AND GOETZ ON ACUTE ASCENDING PARALYSIS.—MM. Déjérine and Goetz (*Archives de Physiologie*, May, June, 1876), report a case of this disease which was originally described by Landry as acute ascending paralysis without lesion of the cord. Their case was that of a man, otherwise in good health, who was admitted into the hospital for vague pains in the lower limbs; two days after admission he became paralysed in his lower limbs; the paralysis progressed rapidly, and he died in less than four days of asphyxia. The lungs were found to be congested, but the other thoracic and abdominal organs seemed perfectly healthy. The brain showed no trace of alterations to the naked eye. The spinal cord appeared healthy; it was hardened and carefully examined microscopically in its whole length; the vessels were dilated, but no lesion was found in the cells, nerve-tubes, or neuroglia; the roots were not examined in the fresh state, but some pieces of an anterior cervical root were examined after hardening, and an atrophy of some of the tubules with an increase of the nuclei of the intertubular connective tissue was noted. Similar cases, in which no lesion of the cord could be demonstrated, have been recorded by Vulpian, Chalvet, Pellegrino Levi, and Hayem. This disease differs clinically from acute myelitis in complete persistence of sensibility, and the absence of trophic changes in the paralysed parts. The

authors regret that the examination of the nerve-roots was not made; they suggest that either this disease is some inappreciable physico-chemical change in the nerve-elements, or its seat is possibly in the nerve-roots, which latter hypothesis has the support of the changes noted above in the single nerve-root examined in this case.

BERNHARDT ON ATHETOSIS.—Dr. Martin Bernhardt (*Virchow's Archiv*, May, 1876), has a paper on this disease, which has only been recognised for the last five or six years, since Hammond described it. He says it consists of involuntary movements, strangely restricted to the fingers and toes, not disordered as in chorea or trembling as in paralysis agitans or disseminated sclerosis, going on during sleep, accompanied by diminution of the cutaneous common sensibility, followed by hypertrophy in the groups of muscles concerned in the movements, and for which hitherto all therapeutic means have been useless. He cites cases published by Hammond (6), Clifford Allbutt (1), Currie Ritchie (1), and Gairdner (1). His own case was that of a boy aged twelve, born of healthy parents, who had suffered from this affection since the age of four, when he had a severe illness, which appeared to have been some exanthema. One of his brothers had died of chorea, and a sister had suffered also from chorea, but had recovered. The boy's intelligence and general health were good, and in short, nothing was observable but a slight loss of power of the right side; the tongue on protrusion inclined slightly to the right side; the pupils were equal; he suffered often from headache. He could stand well on both legs, and walked well. When his attention was not directed to his right hand, the little finger, index finger, and thumb commenced their movements by abducting, adducting, flexing and extending themselves in a remarkable manner. Also when walking, the foot was sometimes drawn up into the varo-equinus position, the toes being drawn down towards the floor. The muscles of the right forearm were hypertrophied, although owing to his condition he had learnt to write and serve himself with his left hand. The movements continued in bed. The other functions were healthy. He remained under treatment some months without change. Dr. Bernhardt proceeds, after relating this case, to inquire whether we are justified in considering that we have to do with a group of symptoms deserving to be considered as a distinct disease. He points out that its range as to age, its extraordinary restriction to the most peripheral parts of the limbs, the nature of the movements, and its one-sidedness, distinguish it from paralysis agitans and disseminated sclerosis. He thinks that it more nearly resembles a hemichorea. The cases on record give several instances of its occurrence in persons who have suffered from some brain-affection, as epilepsy or apoplexy; and he considers it to have analogies with the group of diseases called by Dr. Weir Mitchell postparalytic chorea, or by Charcot, *hémichorée post-hémiplégique*. In this last affection, M. Charcot localises the lesion behind the optic thalamus and nucleus caudatus, in the most posterior part of the foot of the corona radiata in the hemisphere opposed to the limbs affected. In the absence of any dissections, Dr. Bernhardt admits the impossibility of localising the lesion in athetosis; but, taking all the facts into consideration, he is disposed to imagine it as occurring in the hinder part of the internal capsule.

ROBERT SAUNDY, M.B.

SERGEANT ON THE SYMPTOMS OF ENTERIC FEVER FROM DRINKING CONTAMINATED MILK.—Mr. Edward Sergeant, of Bolton, writes as follows in the *Medical Times and Gazette* for August 26, respecting the symptoms observed in patients affected by drinking contaminated milk from a farm at Eagley in the early part of this year.

In investigating the epidemic of enteric fever which caused so much havoc in Bolton and the neighbouring village of Eagley, one was struck by the suddenness of the outbreak, by the constant prevalence of certain marked symptoms, and by the direct connection of attack with the drinking of milk supposed to be contaminated. By far the larger majority of the patients dated their illness from the week ending Feb. 6. Before this several isolated cases had occurred, and afterwards there was a gradual diminishing of cases until Feb. 23, when the epidemic appears to have ceased. The commencement of the attack was in almost all cases the same; the symptoms being rigors, pain in the head (in more than one instance so intense as to have led the medical attendant to suspect meningitis), pain in the back and limbs, and abdominal pains, usually very severe. The bowels were at first constipated; the tongue was coated with numerous papillæ, projecting as red points. Fever, as shown by the pulse and rise of temperature, was always present. In some cases, after two or three days' suffering, intense delirium came on, followed not unfrequently by coma. Vomiting, occasionally directly after drinking the milk, was another marked feature at the commencement of attack. In a few patients evidence of gastric irritation, with the above-mentioned symptoms, more or less severe, composed the entire disease; in others recovery did not take place until the patient had passed through a disease marked with all the symptoms characteristic of enteric fever. The temperature increased, with remissions night and morning; the tongue became dry and covered with sordes; the urine heightened in colour, and had a higher specific gravity; the abdomen enlarged, and became resonant, with greater sensitiveness on pressure, especially in the right iliac region; diarrhœa came on; and in some of the worst cases the acute febrile condition was succeeded by great prostration, with low muttering delirium and subsultus tendinum. The eruption of rose-coloured spots, characteristic of typhoid fever, was present in only a small proportion of the cases, but when noticed it was very copious, mostly covering the abdomen, thorax, and thighs. Hæmorrhage from the bowels or nose was very exceptional; in only one or two cases was this observed. Pulmonary complication was not at all uncommon; in two patients the mischief was so great as to be the immediate cause of death. Relapses were of frequent occurrence; one patient who, at first, apparently had a mild form of the disease, died after a third relapse with suspected perforation of the intestines. Recovery was the most frequent termination of the disease. Out of 111 patients whose illness was clearly traceable to the infected milk, only six proved fatal, namely, two males and four females, of the ages of fifteen, eleven, seventeen, eighteen, fifty, and thirty-four years respectively. As is usual in cases of enteric fever, the period of convalescence varied; in some the disease was gone through in from ten to fourteen days, while in others convalescence was delayed for weeks, the patient being troubled with some of the sequelæ which so often retard the recovery of typhoid patients. The

average duration of illness at all ages was 30·3 days. This varied somewhat according to the age of the patient—for instance, under five years of age the average duration of illness was 29·8 days; between five years and twenty years, 32·5 days; and at twenty years and upwards, 30·3 days. Of the 111 patients attacked, 46 were males and 65 females. The ages were as follows :

Under 5 years	.	.	.	15
Between 5 years and 10 years	.	.	.	14
" 10 "	.	.	.	11
" 15 "	.	.	.	29
" 25 "	.	.	.	19
" 35 "	.	.	.	12
" 45 "	.	.	.	8
" 55 years and upwards	.	.	.	3

As is usual with such epidemics, the largest proportion of cases took place below twenty-five years of age, and these were made up principally of women and children. The decreased susceptibility with advance of years was also observable.

The following are brief notes of a *post mortem* examination made on March 7, on the body of a patient, aged eleven years, who died three days previous, having suffered from the effects of the milk poisoning fifteen days: Body emaciated; great *post mortem* discolouration, extending along the sides of the chest; bed-sores commencing over sacrum; teeth and gums covered with a black coating; abdomen contained a small quantity of fluid; intestines distended with flatus; mesenteric glands swollen and vascular (some of the glands near the ileo-cæcal valve were especially enlarged and congested). About a foot from the commencement of the ileum, separated by a few inches, I found two Peyer's patches, each measuring about one inch long by half an inch wide; they were considerably indurated, and elevated about a line above the surrounding intestines. One of the patches had a portion about the size of a split-pea rather more raised than the rest, and covered with a black slough. In close proximity to these there were three other portions of indurated gland-tissue; one, about the size of a horse-bean, was surrounded by an inflamed areola, and in a state of slough. Kidneys congested, apparently undergoing fatty degeneration. Spleen enlarged, of a blackish red colour and pulpy. Lungs: Both bases were in a state of red hepatisation; the right base on being cut showed a muco-purulent infiltration; proceeding to the upper lobe of both lungs the congestion faded into healthy lung-tissue. Liver enlarged and congested. Heart contained no blood; healthy. The other organs presented a healthy appearance.

RECENT PAPERS.

- A Case of Hemianæsthesia consecutive on Typhoid Fever; followed by Reflections on the Sensori-motor troubles observed in Convalescence from that disorder. By Dr. Calmette. (*L'Union Médicale*, Aug. 5.)
 Clinical Studies on the Urine of New-born Infants in Athrepsia. By M. M. Parrot. (*Archives Générales de Médecine*, Aug. 1876.)
 On the Relation between Aneurism of the Arch of the Aorta and Caseous Pneumonia. By Dr. Victor Hanot. (*Ibid.*)
 Three Cases of Hydrophobia in the Human Subject: Necropsies. (*L'Union Médicale*, Aug. 26.)
 Note on a Case of Lymphadenia without Leukæmia. By M. Desnos. (*Gazette Médicale de Paris*, Aug. 19.)
 On the Frequent Occurrence of Bothriocephalus Latus and its Causes: Researches on the Principal Remedies. By M. Lereboullet. (*Gazette Hebdomadaire*, July 21.)
 Croup in a Chronic Form. By M. Cadet de Gassicourt. (*Ibid.*)

- A Simple Practical Note on Dysentery. By M. Pugliese. (*Lyon Médical*, Aug. 20.)
 Practical Thoughts on the Treatment of Neuralgia. By Dr. Forssac. (*L'Union Médicale*, Aug. 29.)
 On Chronic (Rheumatic) Myitis. By Dr. Helleday. (*Nordiskt Medicin. Arkiv*, vol. viii. part ii.)
 A Case of Progressive Pernicious Anæmia. By A. Burger. (*Berliner Medicinische Wochenschrift*, Aug. 14 and 21.)
 Tonic Cramps in Voluntary Muscles. By Dr. A. Seeligmüller. (*Deutsche Medicinische Wochenschrift*, Aug. 19 and 26.)
 Unusual Features of Variola. By Dr. W. de F. Day. (*Archives of Dermatology*, July.)
 Unrecognised Fatal Variola Hæmorrhagica in the Mother followed by Fatal Confluent Variola in the Child. By Dr. L. D. Bulkley. (*Ibid.*)
 On the Diagnosis and Treatment of Internal Intestinal Obstruction. By Dr. D. Barduzzi. (*Lo Sperimentale*, July and Aug.)
 Eucatharsia, or Hints in Regard to the Mechanism of Defæcation. By Dr. B. Lee. (*Philadelphia Medical Times*, Aug. 19.)
 The Crepitant Râle: its Nature and Conditions of Production. By Dr. W. H. Workman. (*Boston Medical and Surgical Journal*, Aug. 3.)
 The Spread of Cretinism in Bohemia. By Dr. Klebs. (*Allgemeine Wiener Medizinische Zeitung*, Aug. 15 and 22.)
 On the Determination of Sugar in Diabetic Urine by Polarised Light. By Dr. F. Czapek. (*Ibid.* Aug. 1, 8, and 15.)
 On Percussion of the Heart. By Dr. W. Ebstein. (*Berliner Klinische Wochenschrift*, Aug. 28.)
 On Two Cases of Vasomotor Neurosis. By Dr. Zunker. (*Ibid.* Aug. 21 and 28.)
 On Dysphasia in Progressive General Paralysis. By M. Clovis Gallopin. (*Annales Médico-Psychologiques*, July.)
 Studies on the Quickness and the Modifications of Sensibility in Ataxic Patients. By M. Richet. (*Gazette Médicale de Paris*, Aug. 26.)
 Purpura. By M. Guibout. (*La France Médicale*, Aug. 16.)

SURGERY.

FISCHER ON THE ADMINISTRATION OF CARBOLIC ACID TO DIABETIC SUBJECTS BEFORE SURGICAL OPERATIONS.—Dr. H. Fischer, of Breslau, states in the *Deutsche Medicinische Wochenschrift*, no. 14, 1876, that in Germany the number of diabetic patients is very much on the increase. This fact he attributes to the mental excitement due to extreme and sudden political changes, and to rapid alternations in social position. The author holds with Seegen that diabetes is an affection of the nerves, commencing in nerve-lesion, and terminating in psychical disturbance. He has also been struck with the frequent association of diabetes with cardiac disease, particularly with that form in which the muscular tissue of the heart is affected, together with the valvular apparatus. It often occurs that surgical affections, such, for instance, as tumours, necrosis, and caries of bone, etc., met with in diabetic patients, are of such a nature as to render surgical operation necessary or desirable. The use of the knife, however, in such cases is very dangerous, as, according to general surgical experience, the smallest wound in a diabetic patient is usually followed by severe, extensive, and frequently fatal gangrenous inflammation of the subcutaneous cellular tissue. Such inflammation, indeed, is often developed without traumatic cause in the subjects of advanced or overlooked diabetes. When an operation is urgently demanded, as in case of rapid growth and breaking down of a tumour, it becomes the duty of the surgeon to apply, if possible, some treatment that may improve the condition of his patient, and favour the chances of a successful result from his operation.

The author, with this object in view, has lately carried out the carbolic acid treatment recommended by Ebstein and Müller; and he reports that, if this agent be administered internally in small and frequently repeated doses, it will in a short time cause a considerable reduction in the amount of sugar in the urine, and permit the surgeon to perform his operation with the ordinary chances of success. The use of carbolic acid should, it is stated be kept up during the after-treatment, and not be discontinued until the wound formed in the operation be quite closed. In cases of severe and extensive inflammation following an important operation in a subject of overlooked diabetes, the author has frequently succeeded in arresting the local mischief by reducing the amount of sugar in the urine through the administration of carbolic acid. He has also observed good results from an energetic administration of carbolic acid in cases of the so-called diabetic carbuncle. In this affection, however, the treatment often fails, in consequence of the rapid prostration of the patient, of the great extent and intensity of the inflammation, and of early septic infection.

RANKE ON POSTERIOR CATHETERISM.—Dr. Hans Ranke of Halle has recently published a continuation of his experience of this operation (*Deutsche Medicinische Wochenschrift*, no. 29, 1876). In a former number of the same periodical, (no. 6, 1876), this author reported a case from Volkmann's clinic, in which posterior catheterism, that is to say, catheterism of the urethra from the bladder, had been performed with excellent results. He then believed that the operation was indicated in cases in which it was not possible in external urethrotomy for impermeable stricture to divide successfully the whole of the strictured portion of urethra, and to find the proximal extremity of the stricture. A recent case has convinced the author that the associated practice of posterior catheterism can render the otherwise very difficult operation of external urethrotomy one of the easiest of surgical proceedings. The subject of this case was a workman aged fifty-one, who had traumatic stricture of nineteen years standing. In January of the present year he suffered from complete retention, and, as the stricture was found by his medical attendant to be impermeable, the bladder was relieved through suprapubic puncture. The patient came under the author's observation on March 8; he was then a strong and fairly nourished man, but slightly anæmic. On perineal examination; there could be felt a firm material mass in the region of the bulbous portion, which had fixed the urethra to the limbs of the pubic arch. Just above the symphysis was a small granulating punctured wound, occupied by a thick catheter through which was discharged alkaline and turbid urine. This was certainly a case that could be permanently relieved only by external urethrotomy; but it was clear that the operation would be attended with great difficulty, as no guiding instrument could be passed through the stricture. This, then, was thought a good opportunity for testing the value under such circumstances of posterior catheterism. The first attempt made to pass a catheter through the suprapubic punctured wound and the bladder into the urethra failed, as the catheter used was too small and too elastic. This was replaced by a larger and firmer instrument, which at the first trial was passed through the vesical orifice of the urethra.

The beak of the instrument was then readily passed down to the posterior extremity of the stricture, and could be felt on perineal examination in the membranous portion of the urethra. A second catheter having been passed by the penis as far as the anterior extremity of the stricture, there was found to be an interval of about an inch in extent between the extremity of this instrument and the extremity of the instrument passed by the bladder, which interval corresponded to the contracted portion of the urethra. The proceeding of posterior catheterism was then repeated several times without any difficulty. On the following day two catheters were again introduced, one through the suprapubic wound and the bladder, the other by the penis, and the callous portion of urethra between the ends of the two instruments incised. The bleeding from the cicatricial tissue causing the stricture was very slight. An attempt was now made to follow the urethra from before backwards through the stricture, but without success. Then the end of the catheter introduced by the bladder, which could be distinctly felt just in front of the prostate, was laid bare, the proximal extremity of the strictured portion of urethra opened, and finally the remaining callous portion slit up. It was found that the proximal extremity of the stricture had been displaced, through cicatricial retraction, to the left side of the median line. The whole operation from the first incision of the skin occupied but a few minutes. A silver catheter (no. 12) was passed through the stricture and retained in the urethra, and through this instrument a weak solution of hydrochloric acid was passed twice daily into the bladder. The subsequent progress of the case was thoroughly satisfactory. The suprapubic wound speedily closed, the catheter was soon removed from the urethra, and, on the fourteenth day, the wound in the perinæum was indicated by a small granulating ulcer. On April 7, when the patient was discharged from the hospital, a large catheter (no. 13) could be easily passed along the urethra into the bladder, the urine was clear and gave an acid reaction; and the perineal wound had completely cicatrised. The author, in concluding his paper, remarks that, in the face of the excellent results of posterior catheterism in this difficult case, the proceeding may be warmly recommended to the profession for trial under similar conditions. Should its results be as favourable in the hands of others, and there is every reason to believe it would be so, then might this minor auxiliary operation be allowed a respectable position amongst surgical proceedings.

W. JOHNSON SMITH.

MASON ON RUPTURE OF THE BLADDER: OPERATION.—At a meeting of the New York Pathological Society on May 24 (*New York Medical Record*, July 22) Dr. Erskine Mason presented a specimen of rupture of the bladder taken from a man aged thirty-two, who was admitted into Bellevue Hospital on May 13. On May 10 the patient was arrested for intoxication, and was confined in a station-house. Shortly afterwards he complained of inability to pass his urine, and applied for relief. Instead of obtaining assistance, however, he was deluged with cold water. On the following day he was taken to the City Prison (Tombs), where he remained until his admission to the hospital. At the prison his urine was drawn twice.

When Dr. Mason saw him at the hospital he was perfectly rational; had a small, feeble pulse, anxious countenance, and the abdomen was swollen, the

upper portion being tympanitic and the lower portion dull. He complained only of vesical tenesmus. The scrotum was somewhat discoloured, giving rise to the possibility of injury of the perinæum and consequent rupture of the bladder. No other marks of external injury were discoverable. A moderate-sized catheter was passed into the bladder, and twenty ounces of pure urine were evacuated. There was evidently no stricture. A rectal examination was made by passing the forefinger well up into the rectum, behind the prostate. A little to the left of the latter a distinct swelling was recognised, containing fluid. The diagnosis was then made of rupture of the urethra, behind the triangular ligament, with effusion into the peritoneal cavity.

As the only hope rested in an operation, the usual one for lithotomy was performed. As soon as the incision was made, the finger being passed into the bladder, came into contact with, and passed through, a rent into the posterior wall of the viscus. The latter was firmly contracted, and no urine flowed through the incision. A silver catheter was then passed through the rupture into the peritoneal cavity, and ten ounces of a somewhat turbid fluid were drawn off. The patient sank, and died twelve hours after the operation, and on the fourth day from the commencement of the trouble. The necropsy was made a few hours after death, and revealed general peritonitis, with considerable urine in the cavity of the abdomen. The intestines were matted together by recent adhesions. In the posterior wall of the bladder the rent was discovered, measuring one and a-half inches in length, the edges being everted, and presenting a sloughy appearance.

In conclusion, Dr. Mason gave the following statistical account of the operations which had been performed for rupture of the bladder. The first who did this operation for rupture of the bladder was Dr. W. J. Walker, of Boston, 1845. The operation was done twenty-four hours after the accident; the patient recovered. It was done in this city by Dr. Willard Parker, a few hours after the rupture had occurred; the patient recovered. Dr. Mason has had four cases of rupture of the bladder, where he did this operation, and two recoveries. His first case was in 1871. The operation was done on the third day after the accident; the patient recovered. The second case was in 1873, operation being done a few hours after the accident; the patient recovered. The third case was operated on twenty days after the accident; he lived fourteen days. He says that, in seven cases where this operation had been done, there had been four recoveries, a most gratifying result when compared with the seventy-eight cases of rupture of the bladder collected in 1851 by Dr. Stephen Smith, which were treated without operation. Among these there were but five recoveries.

CONNER ON A PISTOL-SHOT WOUND OF THE HEART; DEATH THIRTY-EIGHT MONTHS AFTERWARDS.—The case is reported in the *Cincinnati Clinic* of May 27, (abstract in *American Journal of Medical Sciences* for July) by Dr. P. S. Conner. A lad, aged fifteen, was accidentally shot, December 31, 1872. The ball entered over the sixth rib about one inch posterior to the right lateral line, penetrated the thorax, and lodged. Hæmorrhage was quite profuse at the time, but had ceased when Dr. Conner saw him sixteen hours afterwards. Severe pleuro-pneumonia was soon developed, followed by pericarditis and endocarditis,

but these subsided by the twentieth day and convalescence steadily went on. Examination showed extensive valvular lesions of the heart. There was marked anæmia, with want of muscular strength, and this continued till his death, thirty-eight months after the injury. At the necropsy, the heart occupied a space much larger than normal. The pericardial sac was completely obliterated by adhesions, and the heart when removed measured twelve inches in its greatest circumference, and weighed twenty-one and a half ounces. Old pleuritic adhesions existed on the right side, easily broken down except opposite the cicatrix of the external wound, where a very firm band was found. Four ounces of serum was in the pleural cavities and over a pint in the peritoneal cavity. The abdominal viscera were all in normal condition. The left lung and upper and middle lobes of the right lung were healthy. An incision made into the lower lobe through the denuded space already referred to showed hepatisation, and imbedded in the lung-tissue at a depth of half an inch, unencapsulated and with no evidences of specially diseased tissue about it, was a spiculum of bone a half inch long, one-eighth inch wide, and a line in thickness, evidently a splinter from the rib. No cicatrix of a ball-wound could be found. Upon the anterior surface of the right ventricle, one inch to the right of the ventricular septum and an inch below the auriculo-ventricular septum, was an indurated patch involving the entire thickness of the wall with a very faint cicatricial marking externally. Upon opening the ventricles, there was a canal about one-fourth of an inch in length with smooth cicatricial orifices. Upon the ventricular face of the left anterior segment of this valve, was a vegetation almost circular in shape, one-fourth inch in diameter. The posterior segment was torn, and its remaining surfaces covered with vegetations of large size, some not less than one inch in length. An opening with ragged edges, and covered with vegetations on both sides, established communication with the right auricle at a point about one-third the distance from the fibrous ring to the opening of the superior cava. Upon the posterior wall at the point opposite in the normal position of the parts was a very distinct somewhat stellate cicatricial patch. At the root of the lower lobe of the right lung, just below the bifurcation of the main bronchus of this lobe, the ball was found lodged, completely encapsulated. It was conical, three-eighths of an inch long, one-fourth of an inch in diameter.

VALERANI ON A CASE OF CONGENITAL MACROGLOSSIA SUCCESSFULLY TREATED.—Dr. Valerani, of Casale, relates in the *Giornale della Reale Accademia di Torino* (Fasc. 15-18) that in July 1875 there was brought to him a female infant, about two months old, presenting a condition of the tongue which, the mother said, had existed from birth. There was hypertrophy, with elongation of the organ, which projected about four-fifths of an inch beyond the lips. Sucking was rather difficult, and the lips and chin were constantly moistened with saliva, which flowed from the mouth, which was always open. As sucking was not altogether impeded. Dr. Valerani advised the mother to wait a few months, so that the child might be better able to bear operation. In the following December the child was again brought to him. The hypertrophy of the tongue had considerably increased; the projecting portion was drier than the part within

the mouth, and had a violet colour; the saliva escaped continually; and the aperture of the mouth was widened. Amputation of all the portion of the tongue projecting beyond the dental arches was proposed, and consented to by the mother; and the operation was accordingly done by means of the galvanic wire, without the loss of a drop of blood.

RUGGI ON THE SEAT OF FUNGOUS SYNOVITIS OF THE KNEE-JOINT.—Dr. Ruggi, in a paper published in the *Bulletino delle Scienze Mediche di Bologna* (series 5, vol. ix.), pointed out that, in cases of disease of the knee affecting the articular surfaces of the femur and tibia, the patient seeks instinctively to diminish the contact of the bones by bending the limb. In some cases, however, the limb remains extended; and Dr. Ruggi has published in the same for April and May a case in which he believes that he has found an explanation of this. The patient was a scrofulous old woman, in whom, after a blow, the right knee became swollen, and so painful that she was obliged to keep the limb immovable. She was under Dr. Ruggi's observation seven months, during which time she kept the limb extended; the knee was swollen, hot, and painful; the skin was sound; the capsule of the joint was full of fluid; the patella was pushed forward, the condyles of the femur retaining their proper relations; all attempts to approximate the patella to the femur or to bend the leg were attended with extreme pain. The patient had fever, diarrhoea, and want of sleep, and it was at last found necessary to perform amputation. On examination, the disease was found to be limited to the articulation between the femur and patella. The cartilage encrusting the patella was ulcerated, and there was a corresponding spot of ulceration in the external condyle of the femur. The articular surfaces of the femur and tibia were sound. The inflammatory process had, then, commenced in the anterior part of the articulation.

This case, Dr. Ruggi says, demonstrates that fungous synovitis may be limited to the spot where the patella comes into contact with the condyles of the femur, and in this way may be explained the symptoms in cases where the limb is extended. There would then be two forms of synovitis of the knee, distinct in their seats and in their symptoms. While flexion of the leg on the thigh is the best means of relieving pain in cases of inflammation of the femoro-tibial articulation, extension of the limb, Dr. Ruggi states, is the most favourable position in cases of diseases of the femoro-patellar articulation. In extension, all the anterior soft parts of the knee are relaxed, especially the upper synovial sac of the patella, while in flexion all these parts are tense, and the patella is pressed against the anterior surface of the condyles of the femur; the same may be said of the synovial capsule lying under the quadriceps muscle.

A. HENRY, M.D.

SMITH ON UNRECOGNISED DISLOCATIONS OF THE SHOULDER-JOINT.—Dr. Stephen Smith, Surgeon to the Bellevue Hospital, New York, writes as follows in the *Archives of Clinical Surgery* for July. Several years since, I had occasion to examine the shoulder of a patient who had some time before received an injury by a fall. The case had been treated as a bruise, and was apparently convalescing favourably. There was an evident loss of rotundity in front of and below the acromion, and prominence

posteriorly; the arm hung by the side, the elbow being thrown slightly forward and outward; there was very good motion except in abducting the arm, and in placing the hand upon the head; the power of using the arm was satisfactorily increasing. On careful examination of the shoulder, it was discovered that the head of the humerus was behind the glenoid cavity, but in close contact with its posterior margin. The dislocation was easily reduced by traction on the arm, in a direction forwards and downwards, with immediate relief to the more prominent symptoms.

A second case recently came under my observation. A blind man stumbled and fell, striking upon the shoulder. He suffered somewhat from the immediate effects of the injury, and after a few days applied to a physician who examined the shoulder, and decided that he was suffering from a sprain. I saw him several weeks after the injury and found the condition of the shoulder quite like the preceding case. There was a perceptible loss of fullness under the anterior part of the acromion, and prominence posteriorly; the arm hung by the side as in the former case; he could move it freely except upwards and backwards, and in these motions he was not altogether restricted. He stated that he was daily gaining more and more use of the limb. It was readily reduced by moderate traction forwards, and with a marked snap. On the following day re-dislocation occurred, on slight movement of the arm forward. On being restored, firm support was given to the arm, and the recovery was complete.

Dislocations backward of the upper extremity of the humerus are of two varieties, viz.: subacromial, and subspinous. The second variety, subspinous, is not difficult of detection, as the deformity is very marked, and the arm severely crippled in its movements. Subacromial dislocation, however, is not so readily diagnosed.

In both of the cases given, the dislocation had escaped recognition by the physicians who first examined them, and in both, the patients were apparently satisfactorily recovering from what was believed to be a sprain. There is little doubt that they would have recovered with very useful limbs, new articulations being forward. Is it not probable that this form of dislocation occurs much more frequently than our surgical authorities lead us to believe? These cases are not exceptional. Many of the reported cases were not correctly diagnosed at first. Even Sir Astley Cooper failed in two instances to recognise the nature of the displacement at first, as did also Bransby Cooper in his single case.

Mr. Le Gros Clark has recently had a similar case under treatment (*St. Thomas's Hospital Reports*), and inclines to regard it as a partial dislocation, the head resting on the posterior edge of the glenoid cavity, the capsule being unruptured.

TILLAUX ON A CASE OF SUBCORACOID DISLOCATION OF THE SHOULDER TAKING PLACE SEVERAL TIMES A DAY.—A case of this kind is under the care of M. Tillaux (*Gazette des Hôpitaux*, August 12). The patient is a man aged twenty-five, who dislocates his shoulder daily, many times a day, and reduces the dislocation himself. Long afflicted with epilepsy, the fits of which recurred about every month, and always at night, this young man, who worked at a grocer's, one night about ten months ago, fell out of bed in a fit. When he recovered

consciousness, at the end of about half-an-hour, he perceived that he could not bring his right elbow to his body, and that the movements of his arm were very limited; there was a subcoracoid dislocation. After some efforts he felt a cracking in the shoulder, and the arm resumed its proper shape and functions. The same dislocation occurred two or three months later, but reduction again occurred spontaneously. The patient changed his occupation, but in vain; the limb was dislocated at first twice or thrice a month, then every day, and ultimately several times a day. Generally the luxation takes place involuntarily, but he can do it at will by bringing the arm outwards, a little backwards, and upwards. This extreme facility of displacement being a great infirmity, M. Tillaux hopes to remedy it by the application of an apparatus which, enclosing the shoulder, will place an obstacle in the way of the great abduction of the arm.

REVILLOUT ON A CASE OF FRACTURE OF THE SKULL WITH ESCAPE OF CEREBRAL SUBSTANCE.—In the *Gazette des Hôpitaux*, August 12, Dr. Revillout mentions the following case under the care of M. Tillaux in the Lariboisière Hospital. The patient, a man, on July 1 last, fell from a height of 14 mètres (42 feet) on to the macadamised road. He fell on his head. His forehead was cut open transversely for a length of about 12 centimètres, not far from the roots of the hairs. The wound extended equally on each side of the median line, but on the left side it was narrow, whilst on the right the bone was broken open for a centimètre at least, and the crushed cerebral substance was seen protruding. The patient suffered no cerebral effects except from the eighth to the thirteenth day. On July 13, he recovered consciousness and since then has gone on well. At the present time, the wound is closed. The loss of cerebral substance has not been accompanied by any functional disturbance or any pain.

W. DOUGLAS HEMMING.

BALFOUR ON SULPHUROUS ACID AS AN ANTISEPTIC FOR COUNTRY PRACTICE.—In the *Edinburgh Medical Journal* for August, Mr. John Balfour of Leven advocates for country practice, where the usual appliances for antiseptic surgery are not available, the use of the sulphurous acid wash, originally recommended by Dr. Dewar of Kirkcaldy. He has used it for many years with great satisfaction in all cases of factory accidents, cuts, and lately in a case of amputation at the shoulder-joint. In the proportion of one in twelve of water, it at once alleviates pain, minimises suppuration, is easily applied, and facilitates dressing the wound, while it costs almost nothing. When the fingers are the parts injured, a large tea-cup filled with the wash is put by the patient's side, and into this the injured part, covered with the thinnest rag to be had, is dipped as often as desired. Should the injured part be the hand or any other part of the body, it is supported on a pillow covered with gutta-percha tissue or oilskin, and the wash is applied by means of a little tow, which is allowed to remain in the cup.

RECENT PAPERS.

Acute Thyroiditis, terminating by Resolution. By M. Verneuil. (*La France Médicale*, Aug. 16.)
Considerations on certain Varieties of Stricture of the Urethra. By M. Duplay. (*Le Progrès Médical*, Aug. 5.)

Hernial Strangulation at the level of the Internal Orifice of the Inguinal Canal: Operation: Sudden Death: Necropsy. By Armand Chevallereau. (*La France Médicale*, Aug. 2.)
Study of an Interesting Case of Injury of the Face. By Dr. Beauregard, Jun. (*Ibid.* Aug. 5.)
On Primary Traumatic Effusions of Serosity. By M. S. Duplay. (*Le Progrès Médical*, Aug. 26.)
New Method of Methodical Compression by Means of Air or Water. By Dr. Chassagny. (*Lyon Médical*, Aug. 27.)
On Iliac Phlegmon. By M. Trélat. (*Le Progrès Médical*, Aug. 19.)
Senile Gangrene. By Dr. Bucquoy. (*La France Médicale*, Aug. 19.)
On Immediate Capillary Hæmorrhage in Esmarch's Method. (*Gazette Médicale de Paris*, Aug. 19.)
The Bloodless Cure of Fistula. By Dr. A. Heidenhain. (*Berliner Klinische Wochenschrift*, Aug. 14.)
On Contraction of the Palmar Fascia and the Sheaths of the Flexor Tendons. By Dr. Alfred C. Post. (*Archives of Clinical Surgery*, Aug.)
Structure and Function of the Upper End of the Femur. By Dr. Jarvis S. Wight. (*Ibid.*)
Arthroplastic Operation upon both Femurs below the Great Trochanters. By Dr. Albert G. Walter. (*Ibid.*)
Excision of the Umbilicus for Malignant Disease. By Dr. Willard Parker. (*Ibid.*)
Colles's Fracture and Dr. Carr's Splint. By Dr. H. A. Martin. (*Boston Medical and Surgical Journal*, Aug. 17.)
A Plea for the Revival of the Use of the Suture in the Treatment of Divided Tendons. By Dr. C. Nancrede. (*Philadelphia Medical Times*, Aug. 5.)
On the so-called Organisation of Thrombi. By Dr. P. Baumgarten. (*Centralblatt für die Medicin. Wissensch.*, August 19.)
On Langenbeck's New Method of forming a Lip. By Dr. H. Ranke. (*Berliner Klinische Wochenschrift*, Sept. 4.)
On the Conditions of Success of Surgical Interference in Cases of Intestinal Obstruction. By M. A. Le Dentu. (*Journal de Thérapeutique*, July 10 and 25, and Aug. 10.)
Subperiosteal Resection and Disarticulation of the Right Shoulder Joint for Osteitis, with Necrosis and Partial Ankylosis. By Dr. P. Landi. (*Lo Sperimentale*, August.)
On a Case of Dorso-Lumbar Spina Bifida treated Successfully by Metallic Suture. By Dr. S. Oidoini. (*Lo Sperimentale*, Aug.)
On the Utility of the Actual Cautery in Cases of Caries of the Os Calcis. By Dr. Philipeaux. (*Lyon Médical*, Aug. 6.)
On Preliminary Ischæmia in Operations by Elastic Compression. By Dr. G. Benoit. (*Ibid.* Aug. 20 and 27.)
Umbilical Tumours in the Adult. By Dr. Albert Blum. (*Archives Générales de Médecine*, August.)

MATERIA MEDICA AND THERAPEUTICS.

BÖCKER ON INHALATIONS AFTER TRACHEOTOMY.—Dr. A. Böcker read a paper at the Hufeland Society, of which the following is an abstract (*Deutsche Medicinische Wochenschrift*, July 8, 1876.) He states that the success obtained by him through the use of inhalations after tracheotomy has induced him to publish this paper, containing the results of his experience in seventeen cases. Inhalations of vaporized substances before tracheotomy have long been in use. Lime-water, salt and water, solutions of chlorate of potash, chlorate of soda, and chlorinated soda, and more lately carbolic and salicylic acids, have all been employed. Küchenmeister seems first to have conceived the idea of dissolving the membranes formed in croup and diphtheria. He showed that lime-water would dissolve the membrane in croup. Then Fieber recommended its local use, and Biermer published a case in which, after tracheotomy, one pint of lime-water to thirty of distilled water was used as

a vapour, and he attributed the recovery to this means. Goltstein, of Breslau, applied the lime-water directly to the throat with the aid of the laryngoscope, with good results.

In 1867, Bricheteau and Adrian published a paper in the *Bulletin de Thérapeutique*, entitled 'Recherches sur la solubilité des fausses membranes diphthériques.' They stated that the membrane of croup was very soluble in a solution of lactic acid. Lime-water was less active. Chlorinated lime and soda were still weaker, and other reagents, including the soda and potash salts, were quite inert. Weber, of Darmstadt, was the first to use lactic acid extensively, and he reported his success as overwhelming, and that he had latterly quite abandoned tracheotomy. There are, however, some reasons to doubt if his cases were really all membranous or true croup. Dr. Böcker purposes once more to try lactic acid, though it has not succeeded well with him, and has the disagreeable property of acting as an escharotic on the general mucous membrane of the mouth and throat, so that the little patients object to it. He uses various solutions, and places the inhalation apparatus only about six inches from the cannula. He refers, also, to a paper by Dr. Burow, jun., and to a dissertation by Dr. Vergueiro, who quotes cases of success with this method from Dr. Burow and from Dr. Böcker. The ages of the latter's patients were as follows :

1	under 1 year of age, who died	
2	between 1 and 2 years, both died	
3	" 2 " 3 " "	1 "
3	" 3 " 4 " "	1 "
2	" 4 " 5 " "	both recovered
3	" 5 " 6 " "	1 died
1	" 6 " 7 " "	
1	" 8 " 9 " "	
1	over 10 years of age	
17 cases with	6 deaths.	

There was another death, due to a complication which he regards as successful *quoad* operation. Dr. Burow, jun., has saved six out of eight cases or 75 per cent. whilst he lost seven out of ten before he adopted this method—thus only saving 30 per cent. without inhalation. The vapours used by Dr. Böcker were $\frac{1}{2}$ to 1 per cent. solution of sodium chloride, solution of lactic acid, and solution of carbonate of potash—the salt solution being the one chiefly used.

[The reporter has had considerable experience of the results of tracheotomy, having witnessed the operation more than fifty times, besides having performed it himself. The result of the cases personally known to him is identical with the statistics of Dr. Buchanan, of Glasgow, who out of more than forty cases saved one-third. Exactly one-third of the cases known to the reporter made a permanent recovery. If all those who lived a week or two after the operation were included, the total of recoveries would be over 40 per cent. The question of age is, however, one of such vast importance, that it is doubtful if Dr. Böcker's recoveries were really much assisted by the dilute saline solutions. It will be noted that no recovery took place under two years of age. There is, however, in this paper sufficient encouragement for the further trial of the method, and there certainly seems little danger in the addition of a little chloride of sodium to the vapour of water, already largely used by English as well as by foreign surgeons.—*Rep.*] W. BATHURST WOODMAN.

OSGOOD ON NITRITE OF AMYL IN INTERMITTENT FEVER.—In an article communicated to the *Philadel-*

phia Medical Times for July 8, Dr. Osgood states that, in a case of intermittent fever which came under his notice, the patient being in the cold stage, it occurred to him that, since his peripheral capillaries were in a state of contraction (as in all cases of chill), it would be perfectly logical to expect that the vaso-motor spasm would be overcome by the nitrite of amyl. He administered the remedy by inhalation, using about six drops. The remnant of the chill at once disappeared. He did not, however, consider this a fair case, because the chill-period was nearly over before he saw the patient.

A few days later, a German was brought to the hospital, in the acme of the cold stage; face cyanotic, teeth chattering, and he shaking himself to pieces generally. Dr. Osgood at once administered the amyl. Within forty seconds the chill was gone, and the patient complained of too much warmth. Five minutes later, the patient began to feel chilly. A few inhalations of the remedy again flushed the surface, and there was no subsequent return of the chill; but fever came on as usual.

In a third case, the chill was more obstinate, or the remedy less effectual, for, although the chill momentarily and at once aborted, it returned several times, each recurring chill, however, being feebler than the preceding one, before Dr. Osgood fairly conquered it, which he did by large doses (gtt. xx-xxx). It may be that a heavy dose of the amyl (say f3j) given at the outset would abort a chill at once, and finally. As yet, he has never administered so large a quantity as one drachm, excepting in a case of angina pectoris, mentioned in the *American Journal of the Medical Sciences* for October, 1865. In this case, the patient was a delicate lady; but she was not in the least disturbed by the large dose. Dr. Osgood says that it is premature to set the proper value on the nitrite of amyl as a remedy in malarial fever. In three cases it aborted the chill, having no especial effect upon the later stages, except more or less to shorten them.

BOUCHARDAT ON THE HYGIENIC TREATMENT OF POLYURIA.—In the *Bulletin Général de Thérapeutique* for July 30, 1876, M. Bouchardat has a paper on the hygienic treatment of polyuria; including, under this name, the excess of production or insufficiency of elimination of uric acid or the bi-urates. According to the author, attention must be specially directed to the food, the excretions, exercise, and the skin.

Food should be taken sparingly, well cut and thoroughly masticated. Sorrel, sorrel soup, and tomatoes should be forbidden, and also asparagus and beans if their use cause renal pain or slight deposit in the urine. Meat of all kinds may be allowed, but only moderately; still more sparingly must we allow eggs, fish, lobsters, shrimps, shell-fish, and old cheese; milk is often useful. Almost all seasonable vegetables are good, particularly spinach, endive, lettuce, artichokes, Jerusalem artichokes, celery, carrots, parsnips, and potatoes. The last named are useful, and should take the place of some of the bread with the meal after the English fashion. Ordinary radishes may be advantageously used daily. Cabbages, cauliflowers, Brussels sprouts, mushrooms, truffles, chestnuts, beans, peas, lentils, are not forbidden, but their use must be regulated according to their effect on the digestive apparatus. The daily use of cresses or salad is indicated. All fruits, if the stomach bear them well, may be served

daily. Olives, almonds, walnuts, hazel-nuts, and pistachio nuts must be served moderately. Good chocolate is allowable. If coffee provoke urinary secretion, it may be advised. Brandy and liquors should be avoided; very little beer allowed, and for alcoholic drink a light white or red wine diluted freely with water. White sparkling wines are contra-indicated as well as gaseous drinks, as, soda-water. On waking, going to bed, and with meals, sufficient watery drink should be taken to give about a litre and a third of urine. This watery drink should consist of pure water, Vals water (Saint Jean), decoctions of dogs' grass, of ash leaves, linseed, etc., or better still, a litre of water in which is dissolved one or two teaspoonfuls of powdered Seignette salt.

Excretions.—The bladder should be regularly and completely emptied every six hours at least. In order to attain this end, a good walk after each meal, and the efforts necessitated by defecation, will be found useful. A motion of the bowels should be obtained daily at a regular hour. If necessary, in order to ensure this, one or two spoonfuls of white mustard or linseed should be taken with the morning meal. If this do not suffice, on rising in the morning, a spoonful, of varying size according to its effect, of powder of tartrate of potash and soda (Seignette's salt) may be taken in a glass of liquorice water, lemonade, or orangeade. This should be continued until regularity is produced.

Exercise.—The powers should be exercised as much as possible, carefully avoiding cold not followed by reaction. Exercise of the arms is especially useful. Elastic apparatus may be used for this purpose in the rooms. Among ordinary exercises, the patient should choose that which is most agreeable to him, and should continue it until he is in a good sweat; then he should change, rub himself quickly and thoroughly with dry cloths, and take precaution against colds. Exercise every day, according to power, is the only efficacious prophylactic remedy.

The Skin.—On rising, rapid sponging with water, followed by long and quick rubbing with cloths, with a brush, flannel, or India-rubber, then kneading with the hand with some drops of perfumed olive oil. If exercise cannot be taken, the dry rubbings and kneadings should be sufficiently energetic to warm the whole body, and they should be supplemented by long and deep inspirations.

Every week from one to three baths containing 10 grammes of carbonate of potash, 2 grammes of essence of lavender, and 5 grammes of tincture of benzoin should be taken. These baths should be followed by long frictions and kneadings. If the patient take a season of river or sea baths, they should be of very short duration and followed by rubbings and exercise.

DUJARDIN-BEAUMETZ AND AUDIGÉ ON THE TOXIC PROPERTIES OF GLYCERINE.—In the *Bulletin Général de Thérapeutique*, July 30, 1876, is a very interesting account of an elaborate series of experiments by MM. Dujardin-Beaumetz and Audigé on the poisonous effects produced by large doses of glycerine. The experiments were made on dogs by injecting the substance under the skin. The following are the conclusions at which the authors arrive. 1. Glycerine chemically pure causes in the dog, in twenty-four hours after being introduced under the skin, deadly effects where the dose is in the proportion of 8 to 10 grammes (120 to 150 grains) to a

kilogramme, (35 ounces, 120 grains) of the weight of the dog. 2. The toxic effects (acute glycerism) are comparable within certain limits to those of acute alcoholism. 3. The necroscopic lesions in glycerism are analogous to those of alcoholism, which tends to induce the belief that the toxic effects of these two substances are almost the same. 4. From a therapeutic point of view, there may, therefore, be some danger in introducing glycerine into the economy in too large quantities.

MARTINEAU ON SUBNITRATE OF BISMUTH IN THE INTESTINAL HÆMORRHAGES OF TYPHOID FEVER.—In the intestinal hæmorrhages which supervene in the course of typhoid fever Dr. Martineau (*Lyon Médical*, August 6, 1876, from *Gazette des Hôpitaux*) recommends, on account of its perfect harmlessness, subnitrate of bismuth. He administers this remedy every half hour, until the cessation of the hæmorrhage, in powders containing one gramme (fifteen grains). This method is derived from the practice of Monneret who, considering that bismuth acted specially as a mechanical agent, so to speak, covering the inflamed and ulcerated mucous surfaces, always employed it, in preference to giving half-doses. In five patients, whom Dr. Martineau has thus treated, the result has been well and rapidly attained.

DE CÉRENVILLE ON THE INJECTION OF CHLOROFORM FOR THE RELIEF OF OBSTINATE SCIATICA.—In the *Lyon Médical*, for August 6, appears a summary of a paper by Dr. De Cérenville, of Lausanne, from the *Bulletin de la Société Médicale de la Suisse Romande*, on this subject. Dr. De Cérenville has employed this method of treatment in many cases, with the best results. He chose old standing cases of true sciatica, which had been previously treated by blisters, iodine, revulsion of all kinds, even red-hot iron; he practised the injection in the sciatic region, in the middle of the thigh, in the calf, where the pain was specially referred to the perineal branch, and he obtained very rapid cures. In some other cases he has noted only relative success, that is to say, there has been a reappearance of the pain at the end of some days. Dr. De Cérenville has remarked two accidents of which it is well to warn practitioners desirous of benefiting their patients by injections of chloroform.

On two occasions, he observed complete anæsthesia of the leg in which the injection had been made. This anomaly lasted two days, and disappeared as it had come, suddenly. The puncture had been made in the middle of the thigh, on the posterior part, and the injection had probably penetrated into the sheath of the nerve, or very near it.

In another case of the injection in the upper part of the calf, there was noticed a very painful swelling, which yielded to frictions of mercurial ointment and emollient poultices. Besides these, the author has seen no inconvenience arising from the chloroform. The quantity of the substance employed each time was about fifty drops.

W. DOUGLAS HEMMING.

RECENT PAPERS.

- On Chloral Blisters. (*Le Bordeaux Médical*, Aug. 22, 1876.)
 On the Physiological Action of Nitrite of Amyl and its Employment in Epilepsy. By Dr. Bourneville. (*Gazette Médicale de Paris*, nos. 13, 17, 21, 30, 31 and 33.)
 On Phenic Camphor and its Therapeutic Applications. By

- Dr. Soulez. (*Bulletin Général de Thérapeutique*, Aug. 30.)
- The Therapeutic Value of Salicylic Acid in Acute Exanthemata. By Dr. E. Schwimmer. (*Wiener Medizinische Wochenschrift*, Aug. 12, 19 and 26, and Sept. 2.)
- A Short Remark on the Action of Salicylate of Soda. By Dr. Lürman. (*Berliner Klinische Wochenschrift*, Aug. 14.)
- Contribution to the Therapeutic History of Bromhydrate of Quinine. By Dr. F. Raymond. (*Journal de Thérapeutique*, Aug. 25.)
- On Hemlock, Cicutine, and Bromhydrate of Cicutine. By M. Mourrut. (*Ibid.* July 25 and Aug. 25.)
- Salicylic Acid as a Remedy for Neuralgia. By Dr. E. Hofmann. (*Berliner Klinische Wochenschrift*, Aug. 21.)
- On the Means of Administering Salicylic Acid Internally. By Dr. C. E. Buss. (*Berliner Medizinische Wochenschrift*, Aug. 28 and Sept. 4.)
- The Alleged Decomposition of Salicylate of Soda by the Carbonic Acid of the Blood. By H. Köhler. (*Centralblatt für die Medicin. Wissenschaften*, Aug. 5.)
- Damiana. By Dr. A. Murray. (*New York Medical Record*, Aug. 19.)
- On Bisulphide of Carbon in the Treatment of Cancer of the Stomach. By Dr. J. J. Whittaker. (*Cincinnati Clinic*, Aug. 12.)

OBSTETRICS AND GYNÆCOLOGY.

GOLAY ON A PECULIAR DEFORMITY OF THE UTERUS; CARCINOMA OF THE RIGHT OVARY; ATROPHY OF THE LEFT OVARY; ABSENCE OF MENSES.—At a meeting of the Anatomical Society of Paris (*Progrès Médical*, August 19) M. Golay narrated the case of a woman named Heimberger, aged thirty, a laundress, who was admitted into the Beaujon Hospital under the care of M. Matier and M. Lepine on March 21, 1876. During childhood she had been treated for mesenteric disease, and since that time her belly, without being painful, had always been rather large. She had always some cough, but her antecedents showed no signs of pulmonary tuberculosis. Until last year, she had enjoyed substantially good health.

She had never menstruated, nor had she ever had vicarious hæmorrhages; she had never felt pain about the loins or any other indisposition recurring periodically. She had never suffered from leucorrhœa.

She first perceived some enlargement of the belly in January, 1875, but did not remember on which side it began. This gradually increased, but without discomfort or pain to the patient, until, six months since, it reached an enormous size; and since that time the patient suffered occasionally from oppression, especially when walking or tired. The functions of the bowels and kidneys had always been normal, and the digestion and appetite good. For eight or nine months the patient had been becoming thinner and losing strength, and for two or three weeks there had been permanent infiltration of the legs.

On admission, the upper half of the body was greatly emaciated, while the abdomen was greatly distended; there was considerable inflammation of the lower extremities. The face was very pale, but did not present the cancerous tint. Respiration was very rapid (52 per minute), and the patient complained of beating of the heart. The abdomen was very large, projecting forward, on the right side rather more than on the left. At the level of the umbilicus was a soft, reddish, painless, depressible tumour of the size of a walnut. Palpation revealed general and considerable resistance of the abdomen, which was very hard throughout almost all its extent, only some few points being found slightly depressible.

The general sensation was that of an enormous solid tumour, occupying the whole abdominal cavity, and having no lateral mobility. Sharp percussion did not give any sensation of fluctuation, which could only be perceived by placing the left hand flat on the belly, and giving light taps with the right hand on the abdominal walls. The abdomen was dull throughout, and only on the flanks was there any resonance. These results were not altered by change of position.

Vaginal examination was difficult, owing to the presence of a perfectly intact hymen, and the unwillingness of the patient. The vagina was normal, the cervix rounded, raised and slightly displaced to the left. The body of the uterus was firm, and very mobile. Abdominal palpation comprised with vaginal exploration made the independence of the tumour and the uterus more certain. The diagnosis was of a large tumour, half liquid, half solid, and perhaps more solid than liquid; a multilocular cyst developed at the expense of both ovaries, and accompanied with some ascites. The heart-symptoms were not very remarkable, except for frequency of beat. Pulse 140, small, almost insensible. Respiration was very rapid (52). Auscultation in front revealed nothing abnormal.

The next day, owing to the great oppression of the breathing, the abdominal tumour was punctured at one of the most fluctuating points. Only a few drops of blood flowed; but on withdrawing the instrument about 500 grammes of serous, sanguinolent, and ascitic fluid escaped. A second puncture was tried in another fluctuating point, but only black blood escaped. The patient breathed with less difficulty, and the skin was less tense, while it was easy to make out the edges of the tumour. She died in the course of the night.

On opening the abdominal walls, about 500 grammes of ascitic fluid, strongly sanguinolent, flowed out. The tumour, which almost completely filled the abdominal cavity, was covered by epiploon much congested, reddish, and very vascular, the deep surface of which adhered to the anterior surface of the tumour. Some adhesions, easily broken through, attached the tumour to the small intestine. It sent no prolongation into the pelvis, and was attached to the uterus only by a pedicle of the size of a finger, composed of the proper ligament of the right ovary, much hypertrophied. This pedicle being divided, the tumour was removed from the abdomen, and was found to be regularly rounded, very large, and measuring a mean of forty centimètres (nearly 16 inches), in its different diameters. The surface was mammillated and traversed by numerous vascular branches. It was hard and elastic; some limited points only having a soft consistence. The tissue creaked under the scalpel, and exuded a juice when scraped. Sections were equally mammillated, and presented a white, yellowish, or rosy aspect. It was very vascular. Macroscopically the characters were those of a sarcoma, solid throughout, without evidence of any cyst. Nowhere could any gelatinous consistence be found. The whole mass weighed about 8,900 grammes (about 31 pounds). The uterus was very movable in the pelvis; it was longer than usual (seventy-five millimètres, instead of sixty or seventy); its breadth on the contrary was diminished (twenty-five millimètres instead of thirty-five). The fundus inclined to the right, and the right superior angle appeared much more developed than the left. The cervix, viewed externally, appeared

almost normal, but it was more cylindrical than usual in virgins; its external orifice was slightly dilated, and easily allowed a sound to enter the uterine cavity. Measurement of this cavity by the hystrometer gave sixty millimètres from the external orifice to the fundus instead of 52 millimètres (Courty), or 45 millimètres (Richet). On opening the uterus it was found that the cavity of the cervix exceeded the cavity of the body by a centimètre. The latter curved towards the right tube in the form of a conical canal, so that the angle corresponding to the insertion of the left Fallopian tube appeared diminished. The right Fallopian tube, free from adhesions to the tumour, had its walls red, thickened and hypertrophied. The right ovarian ligament, constituting the pedicle of the tumour, was red and thick, of the size of the index finger, much hypertrophied and presented at the point of division numerous gaping vessels visible to the naked eye. The left Fallopian tube appeared little altered. The left ovary was represented at the extremity of the left ovarian ligament only by a cyst of the size of a large pea, of a greyish aspect, opaline, and containing a little thickish liquid. This atrophy of the left ovary combined with the tumour developed in the right, accounted for the absence of the menses during the patient's whole life, and for many of the attributes of the male sex which she presented; as, almost complete absence of projection of the breasts, and the presence of numerous hairs round the areola, on the cheeks, the chin, and the upper lip. The external genital organs were well formed, and the voice had the feminine character.

Histological examination of the ovarian tumour showed a fibrous stroma with numerous cells of very various forms. The stroma formed very clear alveoli in which were found cells of varying size, but almost all large and of different shapes. These cells enclosed a variable number of nuclei. Numerous vessels were seen in the stroma. The tumour was therefore carcinomatous.

The details of measurement by the hystrometer are interesting, because some authors have shown that in difficult cases, where there is hesitation between a tumour of the ovary and a tumour of the uterus, deformity and lengthening of the cavity of the womb are signs of uterine fibroid. No doubt it is so in a great number of cases, but the present case proves that in certain tumours of the ovary which drag upon and lengthen the uterus, these signs may equally exist.

W. DOUGLAS HEMMING.

INGHAM ON SUDDEN EFFUSION OF BLOOD INTO THE LABIA OF PREGNANT WOMEN.—In the *American Supplement to the Obstetrical Journal* (June, 1876), Dr. J. V. Ingham reports two cases of sudden effusion of blood into the labia of pregnant women. In the first case the patient, twenty-five years old, who was five months advanced in pregnancy, tripped, but was caught by her husband, and was at the moment of tripping conscious of a sharp pain in her external genitals. Dr. Ingham found, on examination, the left labium enlarged to the size of an orange; it was dressed with laudanum and lead water, and gradually contracted and opened, discharging a fetid thick fluid, almost black. It finally healed, and labour came on without any difficulty at term.

The second case occurred in a woman, twenty-two years old, eight and a half months pregnant. She found a lump in her right labium, about the size of

a walnut on waking one morning. She was unconscious of any injury. The tumour increased and became painful, labour came on in a few days, and the tumour was opened as it interfered with the passage of the child's head; blood and pus escaped. The labium healed during the lying-in.

MCGAUGHEY ON TETANUS AFTER ABORTION.—Dr. James D. McGaughey relates (*American Supplement to the Obstetrical Journal of Great Britain and Ireland*, June, 1876), a case of abortion at two and a half months. There was profuse hæmorrhage, which was arrested by plugging the os uteri and vagina. At the end of a week, however, tetanus set in, the tetanic spasms recurring at intervals with opisthotonic rigidity, and the patient died on the fifth day.

MINOT ON RETRO-UTERINE HÆMATOCELE: OPENING INTO SMALL INTESTINE.—In the *American Supplement to the Obstetrical Journal* (June, 1876), Dr. Minot relates a case of retro-uterine hæmatocele in a prostitute. A free opening was made and a quantity of dark offensive blood escaped. While the house-pupil was syringing the cavity with Condy's fluid, the next evening, she uttered a cry of pain. Collapse and death ensued early the next morning. There were found at the *post mortem* examination numerous adhesions among the small intestines, the cæcum, and the sigmoid flexure; besides an opening from the small intestines leading into the hæmatocele. Between the uterus and the bladder, there was a cavity containing a clear yellow fluid.

FANCOURT BARNES, M.B.

MAIER ON TUMOURS OF THE DECIDUA.—Professor Rudolf Maier (Virchow's *Archiv*, May, 1876) has had two opportunities of observing new growths in the decidua, and the following are the results of his researches.

1. There are tumours of the decidua, true deciduomata.
2. These tumours, as it appears, only form in the uterus.
3. The new formations, so far as present knowledge goes, resemble in structure the areolar spaces of the early fenestrated decidua.
4. Primarily, the boundary-wall of these spaces and the contents are composed of only a single element, decidua cells.
5. Only very little connective tissue enters into the arrangement.
6. Single parts of the tumour are composed throughout of solid tissue, and others exclusively of decidua cells.
7. The vascular portion coincides primarily with the connective tissue portion, which in the true tumour tissue is only small, and chiefly present on the outer side of the tumour when it is in connection with the wall of the uterus.
8. The new formations soon form circumscribed nodular growths, soon broader wall-fixed expansions.
9. The occurrence of pregnancy or catamenial irritation has an influence on their formation.
10. By their faster or looser attachment to the wall of the uterus, they may acquire clinical and gynecological importance, quite independent of their possible interference with utero-gestation.

ROBERT SAUNDBY, M.B.

KIMBALL ON A SUCCESSFUL CASE OF EXTIRPATION OF THE UTERUS AND BOTH OVARIES FOR

FIBRO-CYSTIC DISEASE.—This case is related in detail in the *Boston Medical and Surgical Journal* for July 13. The patient, Mrs. W. J. B., was born in 1839, of healthy parents, and, so far as hereditary taints are concerned, with healthy ancestors. During girlhood and womanhood she enjoyed good health; commenced to menstruate at fourteen years of age, and menstruation had since been generally normal.

She was married in January, 1868, and was delivered of a daughter after a natural labour in Oct. 1869; she made a perfect recovery, and continued in good health till April, 1874, at which time she found a small bunch in the left inguinal region, apparently about the size of an English walnut. It gave her no inconvenience, except by the consciousness of its presence. She first consulted a physician regarding it in September, 1874. A rounded tumour, apparently about five inches in diameter, was found in the left and lower portion of the abdomen, movable, falling toward either dependent side, but not so far to the right as to the left. By examination the vagina was found to be normal; the uterus inclined to prolapse, but not very movable, and anteverted at the inner os. The os uteri appeared patulous, and the arbor vitæ showed very plainly on the posterior part of the exposed canal. The length of the uterine cavity was not determined, as it was found very difficult to introduce the sound beyond the inner os. The diagnosis of ovarian tumour, with possibly fibrous enlargement of the uterus, was ventured. In the latter part of the same month the patient consulted Dr. Kimball and Dr. Clapp, both of whom diagnosed ovarian tumour, and suggested operation. In September, 1875, she entered the Massachusetts General Hospital, where paracentesis was done by Dr. Porter, and fifteen and a half quarts of pale, yellow, serous fluid were removed. Three days later she returned home, where she remained very comfortable for a short time, but in about five weeks seemed as large as before the operation. The uterus became very much prolapsed, so that a Meigs's ring was worn to prevent procidentia. The patient became nervous and exhausted, and very much emaciated. Again she sought advice of Dr. Kimball, who, as before, suggested operation. On January 5, 1876 (that date being the middle of her menstrual month) the bowels had been thoroughly unloaded, the rectum cleansed by an enema of warm water, and the bladder emptied, etherisation was commenced at half-past eleven o'clock. The patient came slowly under the ether, and the operation was begun with the ordinary incision in the median line below the umbilicus. The abdominal walls were very thin, with but little adipose material. There then appeared a fleshy-looking substance, of the peculiar dark pinkish colour characteristic of fibrous growth. The tumour was tapped, and a quantity of straw-coloured fluid flowed freely through the cannula. The bulk of the tumour was greatly reduced, but there still remained a considerable fulness in the lower part of the abdomen. The sac was found quite adherent to the peritoneal lining of the upper anterior portion of the abdomen. These adhesions were carefully torn away with the fingers, and the sac brought out through the incision. There was no adhesion at the point of former tapping. Upon drawing the mass up, the pelvis was found to be nearly filled by a fibrous growth which formed the lower portion of the sac, from one to three inches in thickness, and gradually fading upwards into the thin walls of the cyst. The fibrous growth was

found to extend by prolongation to the uterus, and to be thoroughly blended with that organ, making one continuous substance. Both ovaries had small cysts in their substance.

As a preliminary measure the broad ligament was perforated upon the left side, to the left of the ovary, and a silk ligature was passed round it and firmly tied. The tissues between the ligature and the tumour were then divided. A considerable hæmorrhage from the cut surface occurring, a temporary ligature was applied, to prevent the bleeding from the tumour. It now became possible to bring out the whole mass through the incision, and the wire écraseur was applied at a point corresponding to the external os, involving the remainder of the broad ligament and the round ligament of the left side, the upper part of the vagina, and the round and broad ligaments of the right side beyond the right ovary. The wire was tightly drawn and twisted for security, and the mass removed by the knife. The écraseur was allowed to remain, and the stump was transfixed just outside of the loop of the écraseur with a curved trocar, which was arranged to give additional security against the return of the stump into the abdominal cavity. The abraded surface of the peritoneum, where the adhesions had been torn away, was carefully wiped with a dry cotton cloth to make sure that there was no hæmorrhage and that no clots were left, the wound was closed with silk sutures, and the stump cauterised with the hot iron. Care was taken throughout the operation to keep the room at a high temperature (70° to 80°), and to hold the flaps of the incision close to the tumour, that the abdominal organs might be as little exposed to the air as possible. No dressing was applied, except a folded compress of cotton cloth laid over the wound and upon the trocar and écraseur.

The operation occupied just an hour. The pulse and respiration continued natural throughout. Soon the patient began to recover from the effects of the ether. One fourth of a grain of sulphate of morphia was administered by hypodermic injection, and she was left in the care of the nurse.

The mass which had been removed was examined, and found to consist of twenty pounds of straw-coloured fluid and five pounds of solid material, the latter consisting of the cyst, the fibrous growth, both ovaries, parts of the suspensory ligaments of the uterus, and the uterus itself. The specimen is preserved in the medical museum of Harvard University.

On February 10 (thirty-seventh day) the wound was nearly well; and on March 10 the patient was able to go about her house, and attend to her duties.

SEYFERT ON A MEANS OF APPLYING SPONGE-TENTS.—In an article in the *Philadelphia Medical Times* for July 8, Dr. Seyfert remarks that sponge-tents are the best dilators at our service, but they are especially dangerous. Dr. Marion Sims writes: 'He who will give us an efficient, safe, and cheap substitute for sponge-tents will confer a great boon upon surgery. I know of no complete substitute, or I would be too willing to adopt it.' An instrument of this kind must not abrade the mucous membrane or retain secretions, and it should dilate equably and not too rapidly. More than one ingenious contrivance has sought favour as a substitute for compressed sponge, without succeeding in taking its place. The nearest approach, in Dr. Seyfert's opinion, to a safe and reliable tent has been made

by Dr. J. A. McFarraan, who has conceived the idea of preserving the use of compressed sponge whilst doing away with its dangers. His instrument consists of a small metallic or hard India-rubber tube, holding upon its perforated extremity a sponge-tent which is completely enveloped by a closely fitting thin piece of India-rubber. The India-rubber, while permitting the sponge to dilate to its fullest extent, prevents it from absorbing fluids from the canal and protects the cervical mucous membrane from abrasions. Water reaches the sponge through the tube, which has upon its vaginal extremity a distensible India-rubber ball for its reservoir. Instead of limiting the India-rubber covering to the tent, it may be made to envelope the entire apparatus, thus keeping the tube in constant contact with the water, which, by entering the perforations made in the tube, readily finds its way to the sponge.

BLAKE ON A CASE OF UNITED TWINS.—At a meeting of the New York Pathological Society, on February 23 (*New York Medical Journal*, April), Dr. J. E. Blake exhibited a specimen of monstrosity which was apparently in nearly every respect similar to the Siamese twins. Dr. Blake was enabled to present the specimen through the kindness of the consul for Sweden and Norway, who obtained it for Professor Nicolaysen, of Christiania. The twins weighed fifteen pounds, and were born at Tobasco, Mexico, and lived nine days. The father was a mulatto, the mother an Indian. One of the twins had the facial characteristics of the father, the other that of the mother. Both were girls. On examining the specimen it was noticed that the abdominal cavities were continuous, for when pressure was made on the abdomen of one the other became distended. The sternal bones seemed to be connected by a cartilaginous band. There was a common umbilical cord for both.

Dr. Blake remarked that the nature of the specimen in a practical point of view depended on the question whether the union was simply a fusion of the thoracic and abdominal parietes, or, as in the case of the Siamese twins, an union of the liver and other viscera. This point was of practical value, inasmuch as a case of the kind might occur at any time in obstetrical practice, and the question would arise as to the safety of dividing the connecting band.

ARNOLD ON INFANTILE MENSTRUATION.—Dr. C. D. Arnold relates in the *Louisville Medical News* for July 22 the following case. In September, 1873, Mrs. K. gave birth to a female infant of medium size and weight, there being nothing observed about the child unnatural to young infants, otherwise than unusually well-developed mammae. During a period embracing about twenty-four hours, commencing on the third day from birth, it discharged from the vagina, according to the mother's estimate, about one drachm of blood very much resembling in colour and consistency the healthy menstrual discharge of the adult female; then it ceased, but reoccurred at intervals of three or four weeks, until February, 1875, at which time the child died of croup, as is affirmed by the mother, no physician being in attendance. These discharges ordinarily lasted about one day (twenty-four hours), during which time the child was very feeble and quite cadaverous in appearance; but after the subsidence of the discharge it resumed its usual strength, colour, and sprightliness, though

its health was never considered good by the mother. In February, 1876, the mother gave birth to another female infant, which weighed eleven pounds, and which has had excellent health since birth, and is now an exceedingly large and healthy child for one of its age. Its mammae are large, but not so well developed as those of the former child. It has had, commencing about the end of the first week after birth, two periodical vaginal discharges of blood, each being accompanied by symptoms similar to those that characterised the discharges in the other; since which time nothing abnormal has taken place with the child.

RECENT PAPERS.

- Obliteration of the Vagina. By Dr. Fred. Tuefferd. (*L'Union Médicale*, Aug. 31.)
On a Case of Total Extirpation of the Uterus. By Dr. T. Barlacchi. (*Lo Sperimentale*, August.)
How the Uterus is Supported in Multiparous Women. By Dr. Voss. (*Nordiskt Medicin. Archiv*, vol. viii. part ii.)

DERMATOLOGY.

BULKLEY ON THE PATHOGENY AND TREATMENT OF HERPES ZOSTER.—In a paper in the *American Journal of the Medical Sciences* for July, 1876, Dr. L. D. Bulkley, of New York, relates a case in which a man had a large tumour on the right cervical region anteriorly. It disappeared in a few weeks under the use of arsenic, but the patient had herpes zoster in the right arm, the eruption being abundant and rather peculiarly arranged. The chest, front and rear, was entirely free from eruption, there being not even any red or tender spots, sometimes the evidence of aborted eruptions; the surface of the thorax was healthy. The eruption began at the back of the shoulder, but quite low down, at least an inch and a-half below the end of the humerus, and at about the same point, or a little lower down, on the anterior aspect of the arm. The groups here and elsewhere were pretty thickly set, and the inflammatory action was severe, as the vesicles here and also on the arm were large and flat, and many of them had run together, forming large, flat, bulbous masses. The eruption wound around the arm, from behind forwards, in a band of about two inches in width, and followed closely the course of the cutaneous branch of the musculo-spiral nerve. Passing thus around from the back to the front of the arm, the lower portion of the upper arm, and the entire anterior and outer aspect of the forearm were covered with two or three bands of vesicles, irregularly traced and often touching, so that about one-third of the entire circumference of the limb was covered by the eruption.

Upon the hand the disease occupied also the radial aspect and extended down even to the tips of the thumb and forefinger; the pain in the thumb was so great as to keep the patient from sleeping. The eruption appeared to be in about the fourth or fifth day, and the clinical history corresponded to this. The patient was given phosphide of zinc with nuxvomica, and did well.

After a comparison of the distribution of the eruption with that of the cutaneous nervous, Dr. Bulkley sums up in the following recapitulation.

1. Whatever may be the cause of the nerve-irritation, herpes zoster is always of nerve-origin; that is,

it is an inflammatory lesion of the skin wherein the local cell-action, resulting in the production of vesicles, is but a result of nerve-influence, a perverted cell-action caused by perverted innervation.*

2. From the almost constant changes found in the ganglia developed on the posterior or sensitive roots of the spinal nerves of the affected regions, we must infer that the trophic changes observed in the skin have to do with the sensitive nerves, which marks a certain advance in the study of the physiological relations of the trophic nerves or nerves of nutrition.

3. We are not to conclude, however, that zoster is the result of inflammation of the sensitive ganglia alone, for the entire nerve on the distal side of the ganglion has been always found to be inflamed, and abundant proof exists of eruptions of zoster due to various nerve-lesions, peripheral and central, injuries and disease of the transmitting nerves and of the cord and encephalon.

4. In certain cases the origin may be shown to be idiopathic inflammation of conducting nerves (as in Kaposi's case), or they may be affected by pressure or other alteration caused by the presence of a tumour (as in the case given here), or the disease may be the result of surgical or other injury.

5. The origin, therefore, of herpes zoster is a direct nerve-irritation and inflammation, and in ordinary, apparently idiopathic cases, the explanation of this is to be sought for in the same causes as give rise to neuralgiæ in general, some of which are traceable, many or not. The gouty habit, inducing neuralgia, can likewise give occasion to herpes; the direct exposure to cold of the terminal branches of a nerve, as in the head and neck or elsewhere, can cause painful excitation of the nerve itself, or neuralgia, and is equally a cause of zoster; malaria can originate neuralgia, and may not therefore some of the cases of zona be due to a malarial influence? Certainly the prompt action of citrate of iron and quinine in some cases might point to a malarial element.

6. In considering, then, the true nature of herpes zoster, we are rather led away from the skin lesion to the antecedent neuritis, whose manifestations are neuralgia, more or less marked, and disturbances of sensation in the area of nerve distribution, represented by hyperalgesia, hyperæsthesia, and anæsthesia, while at the same time other results of nerve disturbance may occur, as paralysis of muscles, trophic alterations in the tissues, and even necrosis and separation of bone. In other words, the eruption of zoster is an epi-phenomenon to a primary neuritis and neuralgia.

7. The clinical history and therapeutics of herpes zoster are in themselves almost convincing proofs of the neurotic nature of the disease. In most cases, especially in younger patients, the treatment is purely expectative, while in severe cases and in elderly persons the neuralgia is the principal element requiring attention, and this is remedied by measures directed to

the nervous system. In the majority of instances the nerve-irritation or inflammation subsides spontaneously, the whole train of morbid phenomena occupying about the same length of time taken by other self-limited inflammations, as pneumonia and erysipelas, while under certain circumstances the sequelæ require attention, as in other diseases. The local destruction of tissue is sometimes a troublesome feature in the way of ulceration or necrosis of the skin, or the neuralgia persists to a distressing degree even under the the most intelligent treatment.

8. Three therapeutic agents seem to have marked control over herpes zoster, whose cutaneous manifestations as well as painful element they appear to arrest. First, phosphorus, which used in the form of phosphide of zinc, one-third of a grain with one-third of a grain of extract of nux vomica, every three hours, will pretty certainly abort the disease if given early, as recommended by Dr. Ashburton Thompson. I should presume that the tincture of phosphorus, or what is known as Thompson's solution of phosphorus, as now used successfully for neuralgia, would have the same effect. I have not tried them in this disease, but have used the phosphide repeatedly and with most excellent results. Second, electricity: the galvanic current passed directly through the affected nerves, their trunks and peripheral distributions, will have the effect of causing the eruption either to abort, if used early, or will make the newly formed vesicles dry up much sooner than otherwise, and will pretty certainly check the pain. Third, quinine with iron will, I think, if pushed early in the disease, shorten the duration much and relieve many unpleasant symptoms.

Whether ergot, which has been of great service in neuralgia in the hands of some, would check this congestive neurosis I cannot say, but should hope much from it. The hypodermic injection of morphia, as we know, relieves the neuralgia, and if used early and repeatedly, might abort the disease by checking the nerve-irritation, especially if conjoined with atropia. Painting the surface with collodion or collod coating containing morphia would serve the same purpose; some assert that it is a very valuable measure. Ordinarily, the only local treatment required is protection of the inflamed surface; and this is best accomplished by powdering it with starch, and keeping a single thickness of muslin firmly applied, and left on till the vesicles are dried.

BOHN ON PEMPHIGUS ACUTUS NEONATORUM.—Dr. Bohn (*Fahrbuch für Kinderheilkunde*, i Band, 3 Heft) believes that the pemphigus of new-born children is connected with the desquamation of the epidermis, which takes place during the first week after birth. Nurses and midwives frequently bathe infants in water at too high a temperature, wrongly trusting to their own blunted sensations instead of using a thermometer. The consequence is that, the skin being very tender at that time, bullæ are produced. Dr. Bohn points out differences between this affection and true pemphigus, and shows that the idea as to its being a specific contagious disease is a mistaken one.

LEWIN ON ERYTHEMA EXSUDATIVUM.—Dr. G. Lewin (*Berliner Klinische Wochenschrift*, no. 23, 1876) states that the various forms of erythema are in some cases complicated by fever, and pustules may develop on the erythematous part which simu-

* I do not deny the influence also of capillary congestion, but as normal nutrition is rather the result of a proper appropriating of the needed nourishment and a giving up of unneeded and effete elements by the cells of a part, so under abnormal innervation the amount of fluid called for by the cells contiguous to the bloodvessels is larger than is needed, and forms the vesicles; by a lowered vitality endosmosis of the cells of the skin is in excess, as is seen outside of the body in dead animal tissues. Vaso-motor action, being also a trophic affair, is undoubtedly likewise disturbed.

late the pustules of variola. They may be complicated by inflammation in joints, in which there may be serous or purulent effusion, and ankylosis may follow; or endocarditis, with injury to the cardiac valves, may occur. In women especially, erythema is often dependent on inflammation and ulceration of the urethra. This was proved experimentally in the case of a man in whom irritation of the urethra reproduced an erythema which had previously disappeared. Erythema may occur in epidemics. The disease is believed by the author to be connected with the vasomotor nerves.

WINTERNITZ ON PELLAGRA.—Dr. Wilhelm Winternitz (*Vierteljahrsschrift für Dermatologie und Syphilis*, 1876, 2 Heft), after studying the disease in Italy and examining all the available literature on the subject, has come to the conclusion that the most various diseases which follow in the train of poverty and misery have been comprehended under the designation 'Pellagra'; that thus pellagra, as an individual special disease, which is confined to a particular area, does not exist; and that, further, if there is any specific disease attributable to unwholesome maize, its history has yet to be written, and that in any case pellagra is not that disease.

G. THIN, M.D.

RECENT PAPERS.

Two Cases of Herpes Tonsurans supervening in Patients under Treatment for Favus. By M. Aubert. (*Lyon Medical*, Aug. 27.)

On the Relations of Skin-Diseases to Diabetes. By Dr. Pick. (*Allgemeine Wiener Medizinische Zeitung*, Aug. 22.)

Notes on the Local Treatment of Certain Diseases of the Skin. By Dr. L. D. Bulkley. (*Archives of Dermatology*, July.)

On the Treatment of Tinea Tonsurans by Castor-oil. By Dr. Ladreit de Lacharrière. (*Bulletin Général de Thérapeutique*, Aug. 15.)

REPORTS OF FOREIGN SOCIETIES.

MEDICAL SOCIETY OF BERLIN.

March 1, 1876. *The Operative Treatment of Pleurisy*.—In making some remarks on Dr. Ewald's paper on this subject (the LONDON MEDICAL RECORD for July, page 324) Dr. Israel described a case of empyema following the rupture of a hydatid of the liver into the right pleural cavity, successfully treated by operation. The patient was a man, aged thirty-two. In September, 1872, an attack of icterus led to the discovery of a swelling in the liver, which was diagnosed as hydatid. In August, 1874, while staying at Kreuznach, the patient, while turning himself in bed, suddenly felt something burst within the belly; severe dyspnoea, oppression, and collapse set in. The echinococcus of the liver had burst into the right pleura. In December, 1874, he was admitted into the Jews' Hospital. The whole right pleural cavity was distended with fluid; the mediastinum and heart were pushed to the left. The liver was enlarged, extending beyond the umbilicus; and in the umbilical region a knob as large as an apple projected. Puncture was performed eight times; and on February 18, 1874, an incision was made. The first puncture gave exit to opaque tenacious yellow fluid, which coagulated into a solid mass on the addition of acetic or of nitric acid. Microscopic

examination showed hooklets and other fragments of echinococcus, pus-corpuscles, and a large number of cells with fatty nuclei. After repeated punctures, made with antiseptic precautions, the air being excluded, the exudation assumed to the naked eye the characters of pure pus. An incision made in the nipple line gave exit to a large number of echinococcus bladders swimming in pus. So long as, in consequence of the size of the echinococcus bladders, the pleural contents could not be evacuated, the temperature remained febrile; but, when on the eighth day a thick-walled mother-cyst, as large in its entire state as a child's head, was removed, and it became possible to cleanse the pleura more completely, the temperature fell to normal, and remained so during seven weeks, until Dr. Israel introduced a silver cannula through a piece of elastic catheter, the secretion of pus having been reduced to a minimum. The opening now rapidly became narrow, and high fever set in; complete cleansing was impossible, the double-current catheter could not be directed as was desirable, and the pus became offensive. This dangerous condition continued until the aperture was enlarged, and a wide silver cannula again introduced. The fever at once fell, and recovery took place with a very slight amount of deformity of the chest; the respiration was somewhat weaker in the right lung than in the left. Dr. Israel brought forward this case to prove the advantage of careful after-treatment, consisting in the cleansing of the pleural cavity. He was acquainted with nineteen cases in which this had been carried out; seven in the Jews' hospital, eleven in the practice of Dr. Fräntzel, and one in that of Dr. Traube. Of the nineteen, two were still under treatment, and six other cases were excluded on account of complications. Of the remaining eleven, complete recovery took place in ten without any fistula, and in one a fistula remained, as the patient would not allow the pleural cavity to be cleansed. Death took place in this case after some months. Of all the cases, one only was under twelve years of age. Of the six cases excluded, four had secondary pleurisy with phthisis—the disease in two being tuberculous, in a third, complicated with amyloid disease, and in a fourth with dysentery. In a fifth, amyloid degeneration of the kidneys and thoracic fistula existed before the operation was performed. The sixth case was one of empyema, developed during convalescence from a severe attack of enteric fever. The day after the incision was made, inflammation of the lung on the sound side set in, apparently in consequence of a chill, and the patient sank. Dr. Israel thought that his results after incision, being 90.9 per cent. of cures, were more favourable than those of Dr. Ewald, which were only 34.6 per cent.—Dr. Ewald objected to leaving a silver catheter in the opening, as the ribs might become carious, or the aperture might contract so closely about it as to render its removal difficult. Dr. Israel's proportion of successful cases was higher than he had been hitherto able to attain; and he could only wish that he might meet with such remarkably good fortune.—Dr. Israel explained that he did not advise that a silver catheter *à demeure* should be left in the wound. That would be very bad treatment. The cannula which he used projected only just beyond the inner surface of the chest-wall.

A Case of Cæsarean Section.—Dr. R. Cohn related the history of a case in which the operation was per-

formed on account of narrow pelvis, after ineffectual attempts had been made to deliver by forceps and by cephalotripsy. Sutures were applied to the uterus, and also to the abdominal wall. When the wound was healed, the uterus remained adherent to the abdominal wall. In the course of the case, a vesico-vaginal fistula was found to exist, and an operation was performed for its cure; but the patient died, and at the necropsy there were found diphtheritic inflammation of the mucous membrane of the vagina and bladder, and purulent peritonitis, pleuritis, and mediastinitis. The uterus was adherent to the cicatrix in the abdominal wall, and at its lower part to the posterior wall of the bladder. The external os uteri was obliterated, and the uterine cavity dilated.

March 15. *On Baths in general and Kreuznach in particular.*—Dr. Wiesbaden, of Kreuznach, read a paper on this subject, in which he advocated a more complete State-control of the public baths of Germany, the freest scope being at the same time given to local government.

Lactic Acid as a Hypnotic.—Herr E. Mendel read a paper on this subject. Referring to the observations of Preyer and Lothar Meyer, on the hypnotic properties of lactic acid, he said that its effects when administered by the mouth, either pure or in the form of lactate of soda, were uncertain, but he had found very good results from its use in enemata in a large number of cases. The dose of lactic acid was from five to twenty grammes (75 to 300 grains) mixed with an equal quantity of lactate of soda. The use of lactic acid was especially recommended, 1. In cases of insomnia in the course of or during convalescence from debilitating disease, after hæmorrhages, etc.; 2. As a calmative in the excitement of the insane; 3. As a remedy in certain psychoses, in regard to which its precise indications must be determined in the future.

March 29. *Lactic Acid as a Hypnotic.*—In commencing a discussion on Herr Mendel's paper, Herr Senator said that he had used lactic acid, either in divided doses, ten grammes (155 grains) being given in the course of a day; or in single doses of five to ten grammes in sugared water, or as lemonade. With the first-named mode of administration, no weariness was observed. On the other hand, a large single dose produced pure weariness, although lactic acid could not be compared as regarded strength and duration of action, with morphia or with chloral hydrate. There was, however, a troublesome after-effect, which had not been noticed by Herr Mendel nor by Lothar Meyer, the occurrence of rheumatic pains; these he had observed twice, once in a phthisical patient, the other time in a man who had frequent attacks of muscular rheumatism. Rheumatic pains had also been observed in giving lactic acid with other objects, such as the treatment of diabetes, etc. The occurrence of rheumatic pains after the use of lactic acid was of importance in regard to the theory of articular rheumatism; and he asked whether Herr Mendel or Herr Meyer had observed any thing of the kind.—Herr Mendel answered in the negative. The doses used by Herr Senator were too small; at least fifteen grammes should be given. He agreed with Herr Senator, that lactic acid was inferior to morphia and chloral hydrate.

The Preservation of the Teeth.—Herr J. Pätsch made a communication on this subject.

April 26. The President, Dr. Henoch, announced the death of Professor Traube, and made some

appropriate remarks on the event. As a mark of respect to Traube's memory, the ordinary business was deferred.

May 3. *Suppurative Parotitis in an Infant.*—Herr Senator related a case where suppurative parotitis occurred in a child six months old, in consequence of obstruction of Stenson's duct by a very fine piece of down. Relief was afforded by removing the foreign body and making an opening in the exterior of the cheek.

Intussusception in an Infant.—Herr Senator described the case of a child three months old, in which intussusception of the lower part of the bowel took place suddenly two days before the commencement of treatment. The invaginated portion could be easily reached with the finger *per rectum*. Reduction was effected, but the invagination recurred; and therefore injection of water or of air were tried for some time, and afterwards a rectum-bougie was introduced, and allowed to remain until thrust out by defæcation. During the first three days of treatment, there was frequent fæcal vomiting. On the fourth day distension and tenderness of the abdomen set in; the temperature in the rectum did not rise above 38·8° Cent. (101·8° Fahr.). These symptoms were relieved by the application of iced compresses to the abdomen. On the fourteenth day from the commencement of the illness, reduction was effected for the last time with the bougie, and remained permanent. The child was discharged from hospital eight days later, and had remained well for several weeks.—Herr Henoch said that Herr Senator's case further confirmed the observation, that there was little tendency to adhesion in cases of intussusception in early life. This rendered reduction easy. Nissen of Altona had effected replacement successfully in two cases by means of a sponge fastened to the end of an œsophageal bougie, and introduced into the rectum. It was, however, a question whether it would not be better to limit or altogether omit local manipulation. Even in Herr Senator's case, although it was successful, there were symptoms of diffuse peritonitis, which, dangerous in the adult, is especially perilous in early childhood. In adults, so far as he knew, attempts at reduction were not made in cases of intussusception, but ice and opium were used to quiet the bowels, to promote adhesion, and to favour the separation of the invaginated portion. He believed that in Herr Senator's case the possibility of such adhesion and separation was not very remote, as the stools became bloody as soon as he desisted from replacement of the intestine. These bloody stools are only the result of the various obstructions which the intussusception produces; and it may well be assumed that when the case has arrived at this stage, necrotic separation of the bowel may readily occur. He remembered a case which he had seen, together with two colleagues. The patient was a child, about six months old. It had the symptoms of intussusception—bloody stools, distension of the abdomen, severe vomiting; and, on introducing the finger into the rectum, the intussusception was distinctly felt. The first thought was to reduce the bowel, but the fear of breaking down adhesions and so producing peritonitis prevailed. For some days the child continued to suffer from vomiting, and discharged only a thin fluid from the rectum. On the third or fourth day, Dr. Henoch again introduced his finger, and when he removed it, the intussuscepted portion was discharged with an abundance of fæces. The

piece was about three inches long, apparently belonging to the sigmoid flexure. Diarrhœa and meteorism set in, but the child made a good recovery in no very long time. He believed that this result indicated that it was best to leave cases of the kind to nature, which had a good remedy in necrosis of the intussuscepted portion.—Herr B. Baginsky remarked that, while in most cases intussusception occurred in the lower parts of the intestinal canal, and the part became separated with tolerable rapidity, intussusception might also occur higher up in the intestine. A child, otherwise healthy, four and a-half months old, was brought to him, suffering from diarrhœa; for two days it had had irritating and bloody stools. It cried much, and was very restless. The fæces had a dysenteric character. The abdomen was somewhat distended; whether pain were produced by pressure, Dr. Baginsky could not determine. A tumour extending from the right upwards towards the left was felt below the umbilicus; its surface had a smooth feel; fluctuation could not be detected, but there was a peculiar retraction, a kind of hilus, at the border of the swelling. As Herr Baginsky had at the time several cases of dysentery in children under his care, he believed that the case was one of this disease, complicated with a movable kidney; for, to the touch, the swelling perfectly resembled a kidney. The child having died, a necropsy was made, and it was found that the tumour was formed by the intussusception of a large portion of the ileum into the cæcum. Through a remarkable elongation of the mesocolon, the cæcum and ascending colon were completely displaced, and a part of the ileum was invaginated into the cæcum. The vermiform appendix was adherent to the swelling, and was not found without much trouble. There were extensive adhesions; and, on making a section, the mucous membrane was found beset with hæmorrhages at several points, and covered with a dirty greenish-grey deposit. The bowel was permeable to a thin elastic catheter as large as a crow-quill. He thought this case remarkable for several reasons: first, because of the possibility of error in diagnosis; secondly, because the intussusception—at least as far as the pathological changes indicated—was probably somewhat chronic; and finally, because, in spite of the time during which the intussusception had lasted, separation had not occurred.—Herr Senator could not agree with Herr Hensch, but held that the first indication in all such cases was to attempt reduction, especially when the diagnosis of a mechanical impediment was certain. He agreed that the ice and opium treatment was the best in the case of adults, but it was so because intussusception low down in the bowel was much more rare in them than in children, and hence the diagnosis and reduction were more difficult. The fear of breaking down adhesions or of exciting peritonitis should not dissuade one from attempts at reduction. In any case, without reduction, when the strangulation continued, peritonitis and sloughing took place, unless the patient died sooner; but if reduction were effected, there might be no peritonitis, or, if it appeared, it was much more easily repressed than when its exciting cause, the strangulation of the intestine, was still present. He believed that in no case, where reduction was possible, ought we to hope for a natural cure, which rarely took place. In the case which he had related, there was no distinct peritonitis, but only slight irritation. He be-

lieved that he had prevented peritonitis by the reduction of the intussusception.—Herr Hensch remarked that, as in his case the invaginated portion was removed within a few days by sloughing, adhesions must have occurred at that period. It was impossible in any case to ascertain whether adhesions had taken place. The statistics of intussusception which he had examined showed that the separation of the invaginated portion had a favourable issue in a large proportion of cases, though occasionally slight meteorism occurred.—Herr Auerbach had had some years ago a weakly female child two years old under his care, which had suffered for some weeks from prolapsus, attended with severe pain. He gave small doses of strychnia, with the effect of producing relief, and the child recovered in a few weeks.—Herr B. Fränkel thought that intussusception was better treated by rest and opium than by mechanical means.—Herr E. Küster agreed with Herr Senator in recommending reduction, even when adhesion had taken place.—Herr Baginsky said that the insufflation of air into the rectum had undoubtedly been successful. He thought that in recent cases reduction might be attempted, and opium then given.—A few further remarks were made by Herr Cohn and Herr Senator.

ACADEMY OF MEDICINE IN PARIS.

July 25. *The Puerperal Murmur*.—M. Bouillaud resumed the question of the seat of the puerperal murmur. According to him, this murmur is seated in the pelvic arteries (iliac arteries). The uterine arteries would not be large enough to give rise to the murmur of pregnancy. Other abdominal arteries, however, notably the uterine, are capable of producing a puerperal murmur, but less intense than that of the pelvic arteries, which is the true murmur discovered by M. de Kergaradec.

August 1. *Nephritic Crises in Locomotor Ataxy*.—M. Maurice Raynaud read a paper on nephritic crises in locomotor ataxy. The object of the memoir was to show that sometimes, in the course of ataxy, attacks of pain occur, which from their locality and symptoms entirely resemble nephritic colic arising from calculus. In support of this opinion, the writer related a case in which he observed paroxysmal crises of extremely intense pain divided into three periods. In the first, the attacks were divided by intervals of nearly perfect health; in the second, they became to a certain extent subterrant, and gained in frequency what they lost in intensity; and finally, in the third, the paroxysms were gradually replaced by deep-seated and continuous pain. The characters of the pain, the retraction of the testicle, the anuria or ischuria, the vesical tenesmus, in a word, the entire assemblage of symptoms, resemble those of calculous nephritic colic to a misleading degree. However, there are some distinguishing characteristics; first, the long duration of the attack, which may last six or eight days uninterruptedly, a perfectly exceptional occurrence in true nephritic colic; then the frequent return of the paroxysms; finally, the absence of blood, pus, or gravel from the urine. In M. Raynaud's case, the necropsy showed the exactness of the diagnosis, by revealing the existence of typical sclerosis of the posterior layers of the spinal cord.

The Spirophore.—M. Woillez replied to some of the criticisms on the spirophore. He affirmed that its use does not involve the dangers attend-

ing the employment of Junod's cupping glass and the accidents of cerebral anæmia. He was of opinion that the union of the walls of the œsophagus does not allow air to penetrate into the stomach and intestines. If, however, experience show that the use of the spirophore has some disadvantages due to too great power of aspiration in the apparatus, it can easily be remedied by the less complete depression of the lever and the loosening of the India-rubber cloth placed round its neck. In reply to M. Depaul, who prefers artificial respiration by insufflation of the spirophore, M. Woillez declared his disbelief in the absolute harmlessness and perfect efficaciousness of this method. Much time and trouble are required thus to obtain the dilatation of all the vesicles, and sometimes it is not obtained at all; sometimes, too, subpleural emphysema is induced, which never occurs with the spirophore.—M. Cohn, in reference to the spirophore, read some remarks on asphyxia. His experiments had shown him that asphyxia is produced rather more quickly in the water than in cases of occlusion of the air-passages. The time necessary for asphyxia is longer in the larger animals than in small ones; the horse and the ox die at the end of five minutes, the dog and the rabbit in from three to four. At the moment when the respiratory and general movements cease, when immobility of the limbs, insensibility of the skin, and dilatation of the pupils supervene, death is only apparent. A period of from one to three minutes, during which the movements of the heart continue, separates apparent from definitive death, which is marked by the cessation of the cardiac systole. During this intermediate period, some movements of the costal walls, some rudiments of respiratory efforts which may speedily reanimate the asphyxiated patient, are perceived. It is during this transition period, while the heart-movements continue, that artificial respiration is useful. When the ventricles no longer contract it does not succeed in reanimating the heart, although the auricles beat for a shorter or longer space of time. So soon as the movements of the heart are arrested, or are no longer capable of propelling blood into the lung, artificial respiration is powerless; it is, therefore, impossible to reanimate asphyxiated persons long after apparent death. When once the circulation is stopped, there is no hope, and it stops from half a minute to one minute and a half after the suspension of the respiratory movements.

Artificial Vagina.—M. Léon Lefort read an interesting case of the formation of an artificial vagina without having recourse to a cutting instrument, but by the help of a slow and gradual sloughing, obtained by the prolonged use of the continuous current.

August 8. *Complete Extirpation of the Os Calcis.*—M. Ollier read a paper on the complete extirpation of the os calcis by the subperiosteal method. The conclusions of the paper were as follows. Total ablation of the os calcis, performed on young subjects by the subperiosteal method, is followed by the regeneration of the removed bone, a regeneration sufficient to preserve the protuberance of the heel, and the configuration of the plantar arch. The form of the new bone is determined by the form of the retained periosteal sheath; ossification may continue long after the cure of the wound, under the influence of the pressure and the friction occasioned by the use of the foot, at the same time the functions of the foot become re-established according to the normal

type. Those who have undergone the operation walk without support or instruments; they can attempt exercises which would be impossible unless the integrity of the skeleton of the foot were reconstituted; thus they can walk on tiptoe, on the heel, with the point of the foot raised up, and, what is crucial, stand on the toes of the foot operated on, with the other foot in the air. In the comparison of facts, the cases of total necrosis of the os calcis ought to be set aside, and distinguished from the regular subperiosteal operations, in which the surgeon has to detach from the bone a periosteum which is still adherent. In the case of necrosis there is only to extract an already isolated sequestrum, the ossification of the periosteum has already been able to commence all round, and the operation, a simple and easy one, will be attended by excellent results, nature having already done what the surgeon is obliged to do in cases of phlegmonous osteitis or caries, when the bone is still living. Though rarely indicated relatively to the frequency of osteitis of the calcaneum, extirpation finds its indication in the total inflammation of this bone and the extension of this inflammation to the neighbouring articulations, but deep-seated change in the contiguous bones is a contraindication to the operation. Amputation, unless the patient be young, is then preferable. Trephining, cauterisation of the interior of the bone, gouging, or extraction of the central sequestra, suffice in the majority of cases of osteitis affecting the os calcis. In the adult the impossibility of obtaining a regeneration of the bone, sufficient to re-establish the form of the foot, makes the application of the subperiosteal method also equally necessary. By leaving the tendo Achillis in continuity with the periosteal sheath, this will act on the skeleton of the foot like a prolonged tendon, and will preserve a part of the action of the biceps.

Cerebral Topography.—M. Broca read a memoir on cerebral topography, and on some points in the history of the convulsions. It was Gratiolet who first endeavoured to determine anatomically the relations of the cerebral lobes with the cranial walls. It is thus that he thought he discovered that the fissure of Rolando coincided with the coronal suture; in other words, that the frontal lobe of the brain corresponded exactly with the osteologic frontal lobe. Such, however, is not the case, and M. Broca's researches have shown him that the fissure of Rolando ought to be placed at the back of the coronal fissure. These topographic notes are very useful; it is important to know what part of the brain corresponds exactly with a penetrating wound or a depression of any given point of the cranium.

August 16. *The Spirophore.*—M. Depaul resumed the question of the asphyxia of new-born infants and the spirophore. It has the disadvantage of removing the child from under the eyes of the medical attendant, who ought to be constantly examining it; warm baths are impossible with the spirophore, as well as frictions of the limbs, the soles of the feet, etc. Heat is above all things indispensable to a new-born infant, more especially if it be prematurely born.

Decortication of Elephantiasis Noses, and its Definitive Results as regards the Form of the Organ.—M. Ollier read a communication on this operation, which preserves the cartilaginous skeleton of the nose intact, and removes the hypertrophied skin only. The wound is allowed to heal by granulation, and the cicatricial retraction, far from being trouble-

some, compensates the hypertrophy of the cartilages which always accompanies elephantiasis. Decortication may be performed with the bistoury, or the actual cautery, or by a mixed method. The actual cautery is very useful, especially in the vascular regions, where ligatures are uncertain. Every attempt at autoplasty to furnish a fresh covering for the cartilaginous skeleton is useless; at the utmost, recourse may be had to cutaneous grafts; not epidermic, but the large dermic grafts recommended by the author.

ACADEMY OF SCIENCES IN PARIS.

July 3. *The Blood in Anæmia*.—M. Hayem communicated his researches on the colour of the blood in anæmic persons. He had formed a scale of different tints, and he remarked that the variations of the colouring power are not in direct relation with the variations of the number of red corpuscles. On the other hand, his researches had shown him that in relation to the colouring power of the venous blood in a healthy man, the colouring power of the anæmic blood may oscillate between one-fifteenth and one-eighth.

July 10. *Tetanus*.—MM. Morat and Toussaint communicated their researches on the electric state of the muscles during artificial tetanus. All tetanus induced by a relatively unfrequent but constant number of excitations, if prolonged for a certain time, will present three phases. In the first phase the abrupt jerks of the inductor tetanus, which the graphic process shows already fused, are in reality accompanied by accentuated oscillations of the negative variations (induced tetanus); in the second phase, the fusion of the jerks becomes more and more perfect (gradual fall of the induced tetanus); third phase, the component jerks of the tetanus becoming more and more prolonged, the electric oscillations become attenuated, so as no longer to induce reactions in the galvanoscopic *patte* (cessation of the induced tetanus). By bearing in mind the modifications of the electric condition of the muscles, we can distinguish two types in artificial tetanus; one in which the jerks are fused with sufficient perfection to be almost invisible in the muscular tracing, but in which the value of the negative variation nevertheless undergoes oscillations at every jerk capable of inducing a secondary tetanus; this type may be considered as a yet imperfect tetanus. In the other type, not only are the jerks fused, but the negative variation is brought to an almost constant value; this is perfect tetanus, that which the indications of the galvanoscopic *patte* show us to be similar to voluntary contraction.

Fermentation of the Urine.—Dr. Charlton Bastian communicated the following memoir with reference to the influence of the physico-chemical forces. 'In the autumn of 1876, I ascertained that normal and acid urine rendered sterile by boiling might become fertile in two or three days when it was accurately saturated with potash with any other contamination, and after having been exposed to a high temperature. It is impossible for me to give in this extract from my memoir the details of my experiments; but I may say that I took the most minute precautions to avoid in my trials the influence of germs which might have been in the potash or on the sides of the vessels which I used. I also most carefully eliminated all the germs which might have been deposited by the air. As to the influence of

oxygen in the fermentation of urine, I ascertained it by submitting the urine (rendered sterile) neutralised by potash, to the action of an electric current, by means of platinum electrodes, which I had previously placed in the flasks containing the urine. In these experiments, as in the preceding ones, all precautions were taken to eliminate the atmospheric germs. The results of these experiments were very remarkable. Under the combined influence of the potash, the oxygen, and the temperature of 122° Fahrenheit (50° Centigrade), the sterile urine fermented rapidly and was filled with bacteria in from seven to twelve hours; that is to say, in a much shorter time than would have been necessary to cause fermentation in normal urine exposed to the air during the summer. It therefore results from the experiments which I have just analysed that the fermentation of urine is absolutely independent of the germs which may exist in the air.'

July 17. *Fermentation of the Urine*.—M. Pasteur contested the assertions made by Dr. Bastian on the fermentation of urine. The experiments of this writer, he said, are exact; but he cannot draw positive conclusions from them, because he has employed a watery solution of potash, and the water of that solution might have contained the germs of bacteria.

Fuchsine in Wines.—M. Husson communicated a memoir on the search for and the quantitative determination of fuchsine and arsenic in wines artificially coloured by fuchsine. Wines to which a little ammonia is added become of a dirty green tint, and a thread of white wool steeped in this mixture becomes discoloured by acetic acid if the wine be natural, and of a pink colour if it contain fuchsine. In order to determine the amount of the arsenic, the gaseous current which escapes from Marsh's battery is introduced into a titrated solution of iodine. Fuchsine seems to have a toxic effect on the lungs.

Anæmia.—M. Hayem read a third note on the blood in anæmia. In the adult in good health the blood contains about 5,500,000 red corpuscles to the cubic millimetre. In serious cases of anæmia this number may fall as low as 1,000,000. But in the slighter kinds of anæmia this or a greater number may be the normal standard. The best way of ascertaining the degree of anæmia is to verify the colouring power of the blood. For this purpose M. Hayem has formed a scale of tints.

Faradisation of the Brain.—M. Bochefontaine communicated a note on some phenomena determined by the faradisation of the grey cortex. 1. By means of the mercurial kymographion, it is ascertained that the faradisation of the points called motor centres of the limbs ordinarily produces a rise of from 14 to 16 centimètres of the blood-pressure in the carotids. At the same time the cardiac pulsations are slackened. Sometimes, under the influence of a single excitation, alternate accelerations and slackenings of the pulse are observed, and the medium tension is seen to undergo oscillations, whilst remaining higher than before faradisation. It is known that pressure also rises, and that the pulse is accelerated when the two vago-sympathetic nerves of the neck are cut. If the gyrus then be faradised the intra-arterial tension still increases, but the cardiac systoles are slackened. In several experiments, the section of the two pneumogastric nerves alone between the superior cervical ganglion and the base of the cranium, modified the effects of faradisation of the brain. The blood-pressure, instead of increasing at

the moment of this faradisation, is lowered from four to five centimètres; at the same time the pulse has become slower. 2. It is known that faradisation of the sigmoid gyrus brings on a considerable and immediate dilatation of the pupil. This faradisation, in an animal of which the spinal marrow has been divided transversely, brings on rapid dilatation of the pupil. Now, in this experiment, the excitation has not been able to follow the cervical cord of the sympathetic; it is probable that it has reached the isthmus of the encephalon whence it has been conducted to the ophthalmic ganglion of each side by sympathetic nerve-fibres, springing from that portion of the encephalon. 3. Faradisation of the brain brings on excessive secretion from the submaxillary and parotid glands, increasing the quantity of saliva secreted by glands tenfold. This fact may be utilised in physiology, in order to collect parotid saliva. 4. The stomach and the intestines are influenced by the stimulation of the limb-centres. The pyloric portion of the stomach contracts forcibly for an instant, then its peristaltic and antiperistaltic movements are either slackened or suspended. The intestinal walls contract in an irregular manner. 5. The bladder contracts, and more or less completely expels the urine which it contains. 6. The spleen becomes forcibly contracted, so as to diminish its bulk by one third. 7. If cannulæ be placed in the ductus choledochus, and in the pancreatic duct, as well as in Wharton's and Stenson's ducts, it is seen that the bile and the pancreatic fluid cease to flow when the faradic current is made to pass through the region of the sigmoid gyrus, whilst the submaxillary and parotid glands secrete abundantly. All these facts concur to show that faradisation of the points called motor centres of the limbs acts on the various apparatus of organic life.

July 24. *Pemphigus*.—M. Vulpian read a note by M. J. Déjérine on alteration of the peripheric ends of the cutaneous nerves in a case of eruption of bullæ of pemphigus. In a woman suffering from general paralysis with an eruption of pemphigus, diffused meningo-encephalitis and a sclerosis of the lateral cords along the whole length of the medulla, were found.

Dressing of Wounds.—M. Larrey presented, from Dr. Minich, of Venice, a work on the antiseptic treatment of wounds and on a new method of dressing by sulphite of soda. This substance is alleged to be superior to the other antiseptics, and is sold at a more moderate price.

The Fermentation of Urine.—Dr. Bastian replied to the objections of M. Pasteur respecting his experiments on the fermentation of urine. He declared that the watery solution of potash can only fertilise urine made sterile, in a proportion corresponding to the acidity and the exact quantity of liquid submitted to experiment. Besides this, both fresh and acid urine ferment under the influence of the temperature of 50° without the addition of potash.

REVIEWS.

Lectures on the Comparative Anatomy of the Placenta. First Series. By WILLIAM TURNER, M.B. Lond., Professor of Anatomy in the University of Edinburgh. With Illustrations in Chromo-Lithography. Edinburgh: A. and C. Black, 1876.

These lectures, which constitute the first part of Professor Turner's researches on the placenta in the higher mammals, were delivered by him last year at the Royal College of Surgeons in London.

Professor Turner prefaces his observations on the structure of the three groups of placenta—the diffuse, the polycotyledonary, and the zonary—by some remarks on the structure of the unimpregnated uterine mucous membrane, which is the seat of the developmental processes in the formation of the maternal or glandular portion of the placenta, and points out the absence of the utricular glands in this membrane until probably the stage of sexual maturity. Under the head of diffused placenta, Professor Turner has very fully described the placenta in the pig, the mare, and the cetacea. Professor Turner has found patches of chorion at each pole bare of villi in all three, and also stellate non-villous surface, nearly of the size of a crown-piece, and with several bare lines radiating from it opposite the os uteri, the arrangement corresponding very closely with that just described in the chorion of the mare in the same locality. These large radiating bare spots in the mare and cetacean are exaggerated representations of the small radiating spots, so abundantly distributed over the chorion of the pig.

In the two specimens of placenta in the mare which Professor Turner has examined, the chorion was studded with villi, except at the os uteri internum and opposite the Fallopian orifices, where it presented bare patches. These were placenta of advanced stages. Professor Ercolani, in his lectures on 'La porzione glandulare o materna della placenta,' describes the same appearances at the tenth week; he says, 'the whole external superficies of the chorion at the tenth week is studded thickly with villi, except at the os internum and orifices of the Fallopian tubes, where the development of the villi gradually disappears as one travels from the central portion towards the extremity of the uterine horn, or towards the internal aperture of the neck of the uterus.'

In the order Ruminantia, where the multiple or polycotyledonary form of placenta is found, the placenta in the well-advanced gravid uteri of both the sheep and cow are most minutely described; and the crypts in which the foetal villi are lodged are shown to be interglandular, as in the diffused placenta, and to be new structures formed during pregnancy by hypertrophy and unfolding of the interglandular part of the mucous membrane.

The description of the single or zonary placenta is illustrated by coloured plates, chiefly from microscopic drawings by Dr. J. C. Ewart. In this section the placenta of the carnivora, pinnepeia, and the hyrax, the placenta of which Professor Turner shows to agree with that of felis, not only in form and structure but in the large size of the sac of the allantois, differing, however, in the early disappearance of the umbilical vesicle.

Professor Turner supplements this portion of his lectures with a section on the 'General Morphology of the Diffused, the Polycotyledonary, and the Zonary Placenta.' He reserves until the concluding course of his lectures the consideration of the question, how far the modifications in the form and structure of the placenta may be taken as affording a sound basis for the classification of the placental mammals, and confines himself to the deciduate or non-deciduate character of the placenta described in this series. From observations recently recorded by

him on the shed membranes of the sheep and cow, at the Royal Society of Edinburgh, Professor Turner is of opinion that polycotyledonary placenta is not, as is usually supposed, non-deciduate, for he has seen quantities of maternal epithelial cells intermingled with the villi of the foetal cotyledons. These are Mr. Turner's words on this point. 'In a few instances I saw groups of such cells in immediate contact with the terminal villi, as if they, in being drawn out of the pits in the maternal cotyledon, had pulled an envelope of epithelial cells along with them.' He is therefore of opinion that the foetal cotyledons carry away with them, during the act of parturition, a portion of the maternal structure; so that in these animals, and presumably in other ruminants, the placenta is deciduate.

In the physiological remarks with which he concludes these most interesting lectures, Professor Turner states that he believes that the utricular glands continue to pour out their secretion throughout pregnancy; in which belief he differs from Professor Ercolani, who believes that their secretion ceases when the secretion in the crypts commences.

As Professor Turner's views on foetal nutrition are new, it is as well to give his own words. 'As there are two sets of secreting structures in the gravid maternal mucosa, the glands and the crypts, each of which has in relation to it a definite and usually distinct surface of the chorion, it may be a matter for consideration how far these secreting organs perform similar or different functions in foetal nutrition. . . . In the mucous coat the pre-existing utricular glands are enlarged, and in addition multitudes of crypts are developed, in which secretions are produced capable of nourishing the foetus during its intra-uterine life, so that the maternal placenta is a great secreting organ. If this view of the function of the maternal placenta be admitted, then the current doctrine that the nutrition of the foetus is provided for by a simple percolation or diffusion of materials through the walls of the vessels from the maternal blood to the foetal blood can no longer be accepted.' With regard to the interchange of gases in the placenta, he says, 'The interposition of a layer of cells, possessing some thickness, on the surface of the maternal placenta, between the two systems of vessels, whether these cells be regarded as secreting or not, necessarily throws a mechanical difficulty in the way of the ready passage of gases from the one set of vessels to the other, and might be used as an argument against the theory of intra-uterine respiration.' Professor Turner is therefore of opinion that the problems of nutrition and respiration in the foetus are not satisfactorily solved. FANCOURT BARNES, M.B.

A Practical Treatise on Urinary and Renal Diseases, including Urinary Deposits. Illustrated by numerous cases and engravings. By WILLIAM ROBERTS, M.D., F.R.C.P. Lond., Physician to the Manchester Royal Infirmary; Professor of Medicine in the Owens College, Manchester. Third Edition, revised and enlarged. Pp. 631. London: Smith, Elder, & Co. 1876.

It is too late in the day to write an ordinary review of this book. A third edition of a work of this size makes the author quite independent of all carping and petty criticism. Dr. Roberts has not only produced a good book, but he has filled a manifest blank in medical literature. Before the publication of his first edition, practitioners had Vogel and

Neubauer, Prout, and Golding Bird, Lionel Beale, and a host of minor works on the kidney and urinary diseases, together with hundreds of scattered papers of more or less value in English and foreign medical journals and year-books. No one of these volumes was exactly what a busy practical man wanted. One was too chemical; and if he wanted to learn how to test for sugar or albumen, or other normal or abnormal constituents of urine, he was offered a variety of processes, an *embarras de richesses*, which puzzled him, because he did not know which to choose. Add to this that many of the descriptions, especially in German works, were none too clear, and we cannot wonder if the plain practical man felt puzzled. Another work on the same subject was almost entirely microscopic, and perhaps either his eyesight or his early training disqualified him from pursuing this mode of inquiry with much zeal. As to collecting and collating the multifarious literature scattered in journals and reports, neither his time nor the public or private libraries to which he had access enabled him even to attempt such a labour of Hercules. To such a man, to the average intelligent but hard-worked practitioner, Dr. Roberts' book is a perfect God-send. It contains directions for the analysis of urine in clear and intelligible terms. It does not demand any great amount of apparatus. There is a good deal about the microscope and its revelations *quoad* urine, and the whole is made intelligible by actual cases. More than this, all the best English and foreign literature has been laid under contribution by Dr. Roberts, and the result is that the average practitioner who masters the contents of this book is placed 'alongside' of all that is really known of the kidney and its diseases. The second edition was an improvement on the first. The third is an improvement on both. Amongst the changes in this edition are an account of Russell's and West's method of estimating urea, of Dr. Lewis's discovery of the *filaria sanguinis hominis* (with figures) and of its connection with chylous urine; then a brief notice of the views of Gull and Sutton, and of Dr. Dickinson's researches on the morbid anatomy of diabetes. The author's new mode of estimating albumen by dilution is also described. Of this we can only say that, although highly ingenious, we doubt if it will ever become popular. The author estimates the necessary time for the process at from ten to twenty minutes. But in ordinary hands it is more likely to take thirty or forty minutes—a length of time which must prevent the clinical use of any method. If an example were wanted, Liebig's process for urea testing would supply us with one. Excellent and accurate as it doubtless is, it is seldom employed, merely because the time required is too long.

If we were disposed to be a little hypercritical, we should point out that, whilst Dr. Roberts professes to confine himself to methods and processes which are practical and generally admitted, and for this reason dismisses a variety of tests for albumen and sugar with the curtest of notices, he yet enters at some length into the views of Schunk on urinary pigments, which are certainly at the present moment not generally admitted by chemists, and still a debatable ground. This, however, is a matter of small moment. It does, however, seem to us to be a matter of some importance that Dr. Roberts has not alluded (or at all events only in the most cursory manner) to the great importance of using clean test-tubes in testing for albumen. Very few days pass

by without our finding some student or some practitioner overlooking the existence of albumen in urine, because he or they have used test-tubes which were not cleansed from nitric acid. We owe the discovery of this source of fallacy, if we mistake not, to Dr. Brown-Séquard. We think, too, that Dr. Roberts has not made it quite clear that albumen in the urine is very often quite distinct from chronic kidney-disease, as its presence may be caused by an excess of azotised or albuminous food, or by leucorrhœal and other purulent discharges, or by temporary congestion of the kidneys. Again, in the section on diabetes insipidus, Dr. Roberts scarcely mentions the gravity of the prognosis. We believe that Dr. Ramskill, who has seen a large number of these cases, says that they nearly all terminate in more or less sudden death. One striking instance of this kind is recalled to our memory. A young woman, aged about twenty-three, was under treatment as an out-patient of the London Hospital for diabetes insipidus. Dr. Woodman had charge of this case. The daily secretion of urine was about eight or nine pints. Its specific gravity was 1.002. She had slightly improved whilst taking quinine when she sprained her ankle, and was taken into the surgical wards of the London Hospital. No mention was made of her previous complaint, and in a week or so she was discharged as cured, the chairman of the House Committee congratulating her on her blooming appearance. As she was leaving the hospital, she died on the very threshold or doorstep. At the *post mortem* examination no adequate cause of death was discovered. As, however, the pathologist was in ignorance of her previous history, it would seem that the fourth ventricle and other parts of the nervous system were not very minutely examined. Other cases of very similar nature are known to the reviewer. These, however, are but very minor blemishes in a book which, in our opinion, is one of the very best which has ever issued from the press in modern times. The publishers have done their part well; the book has been adorned with a coloured plate of Vogel's colour-standards of the urine, and with eighty or more illustrations on wood. We shall perhaps best show the style and practical character of the work by extracting that part which treats of 'Russell and West's Modification of Davy's Process for the Estimation of Urea.' Dr. Roberts writes as follows.

'The principle of this method depends on the decomposition of urea by the hypochlorites and hypobromites. The amount of urea is determined by measuring the volume of nitrogen evolved.

'A solution is prepared by dissolving 100 grammes of solid caustic soda in 250 cc. of water, and adding 25 cc. of bromine. The apparatus constructed by Dr. Russell and Mr. West for the performance of the analysis is both compact and cheap. [Cetti, Brook Street, Holborn, London, price 8s. 6d.] But it is not so convenient and accurate to work with as that devised by Mr. Apjohn. Mr. Apjohn's apparatus consists of:—

'1. A glass measuring tube of about a foot in length, drawn out at the end which will be uppermost when the tube is used like a Mohr's burette, and subdivided into thirty parts of equal capacity, the aggregate volume of which is 55 cc.

'2. A small, wide-mouthed, glass bottle of about 60 cc. capacity.

'3. A short test-tube of 10 cc. capacity, and of such height that when introduced into the gas

bottle it will stand within it in a slightly inclined position. The following are the arrangements for combining the apparatus and working an experiment. [Here follows a woodcut.] The graduated tube, held in a clamp attached to a retort stand, is depressed into a glass cylinder, nearly filled with water, until the zero mark, which is near the upper end, exactly coincides with the surface of the water. 15 cc. of the hypobromite solution (100 grammes of NaHO, 250 cc. of water, 25 cc. of bromine) having been poured into the bottle, the test-tube containing the urine is introduced by means of a forceps, care being taken that none of its contents shall spill into the hypobromite. The flask is now closed with a very accurately fitting India-rubber stopper, perforated with a hole, in which is inserted a short piece of glass tubing, open at both ends, and is then connected with the measuring-tube by means of a piece of elastic tubing. It is now inclined so as to allow the urine to mix with the hypobromite. Effervescence at once commences, and as it proceeds the measuring-tube is gradually raised so as to relieve the disengaged nitrogen from the hydrostatic pressure. The flask is shaken a few times, and when the reaction is completely over, the apparatus is left for a few minutes, until it has acquired the temperature of the room in which the experiment is performed. Another exact levelling of the measuring-tube is made, and the number of the division corresponding to the volume of the developed nitrogen is read off. The tube is so graduated that when 5 cc. of urine are operated on, each division corresponds to 0.1 per cent. of urea, or 0.44 grain per fluid ounce of the British Pharmacopœia. An easy calculation from these data gives the daily discharge of urea. Suppose 45 ounces of urine are voided in the 24 hours, and that 5 cc. of this evolves 20 measures of nitrogen with the hypobromite solution, then $0.44 \times 20 \times 45 = 396$. The daily discharge of urea was 396 grains.

'I have carefully tested this method, and have found it easy, accurate, and speedy.'

It should have been mentioned that the hypobromite solution will not keep long, and should from time to time be tested with a standard solution of urea.

Dr. Roberts's work is accompanied with a good index, and every chapter is preceded by bibliographic references of extreme value and interest.

Studien in der Anatomie des Nervensystems und des Bindegewebes. Von AXEL KEY und GUSTAF RETZIUS. Stockholm: 1876.

Studies in the Anatomy of the Nervous System and of the Connective Tissue. By AXEL KEY and GUSTAF RETZIUS of Stockholm.

These researches began in 1869, and have been continuously carried on. Their origin was the object of determining the connection between the sub-arachnoid spaces of the brain and cord. Injections of the spinal subarachnoid space caused not only injection of that of the brain, but also of the ventricles, and of the inner lymphatics of the brain and cord; in addition, there was a discharge of the serous fluid of these spaces towards the vascular system through the Pacchionian bodies, and these spaces were found to be in direct connection with the lymphatic system of the body and with the lymphatics of the perceptive organs and of the peripheral

nervous system. The space between the dura mater and the arachnoid was found in the cerebral organs to be quite separated from the subarachnoid and internal lymphatic spaces, and only to be connected with them peripherally, since this space has an outflow to the system of blood-vessels through the Pacchionian bodies, and is connected with the peripheral lymphatic system and with that of the higher perceptive senses as with those of the peripheral nerves. By injecting the peripheral nerves they not only found the lymph-canals, but were led to a complete investigation of the structure of the nervous system in general, and also of the connective tissue. In the membranes of the brain and cord they found types of the cellular and of the firm fibrous tissue; in the peripheral nerves they found a lamellar form, besides various others. Much trouble has been bestowed on the plates, and the text is given in German. The first part of the work is now published; the second part will appear in the present year. The first part contains an account of the membranes and serous spaces of the brain and cord, and of the subdural space, the subarachnoid space, and the general arrangement of the pia mater; the open connection of the brain-ventricles with the subarachnoid spaces; the general and special histology of the pia and of the dura mater, the Pacchionian bodies, the sheath and the sheath-spaces of the optic nerve and their connection with the serous spaces of the brain, the internal constitution and the canals of the optic, the lamina cribrosa, the optic papillæ, the connections of the sheath-spaces of the auditory nerve and of the labyrinth with the serous spaces of the central nervous system, and the lymph-canals of the nasal mucous membrane as connected with the serous spaces of the central nervous system. The second part contains the construction of the perivascular system of the cerebro-spinal and sympathetic ganglia in addition to the general structure of connective tissue. The price of the first half (to be obtained from Messrs. Williams and Norgate, Covent Garden) is 8s. The first part contains 217 pages. The plates are beautifully worked up, and eminently merit the attention of histologists.

In order to afford a better idea of the way in which the work has been carried out we give a brief summary of the text accompanying the plates on the lymphatic canals of the nasal mucous membrane in their connection with the serous spaces of the central nervous system. Schwalbe succeeded in injecting from the subdural space of the brain lymph-vessels in the nasal mucous membrane. Key and Retzius, by injecting the subarachnoid spaces of the cord and brain, achieved a filling of the perineural sheath of the nerves of the nasal mucous membrane, and between these branches a net of vessels which was separated from the blood-vessels, and corresponded with the lymph-canals. Michel had already arrived at a somewhat similar result.

When they allowed a coloured fluid (Richardson's blue) under continued mild pressure, to flow into the subarachnoid spaces of a recently killed dog or rabbit, the canals and network of vessels in the nasal mucous membrane were more or less filled. At first were seen long cylinder-tubes, more or less parallel, radiating from the lamina cribrosa, being, in fact, an injection of the olfactory twigs. The extent was more or less, according to circumstances. It frequently happened that in addition injection reached a network of fine anastomosing passages, which, found chiefly in the vicinity of the lamina cribrosa,

pervaded the mucous membrane, forming long meshes lying between and parallel to the nerve-twigs, and crossing them; at times this network extended to the external nasal orifices, and might be found occasionally in connection with an injection of the frontal sinuses. It became a question whether this network belonged to the lymphatic or to the venous system, but they proved that the vessels injected from the subarachnoid spaces were quite separate from the blood-vessels. On complete filling of the blood-vessels of the nasal membrane, arteries, capillaries, and veins, the network injected from the subarachnoid space was found to be quite independent. Hence it was clearly lymphatic in nature, and these lymphatics grouped themselves in stems, which finally ended in lymph-glands of the neck. That the lymph-vessels can be injected quite independently from the perineural ones, simply proves that they can be quite filled without any filling of the perineural nerve-sheaths, just as these can be without filling the lymphatics. Thus the lymph-vessels must, in the greater part, stand in absolute connection with the serous cavities. Similar results were obtained by the asphalt-chloroform injection of Ludwig. In addition, they show a system of juice-canals (*Saftbahnen*), which are really connected with the lymphatics, such as Lovén has recently shown in the stomach. They conclude that an injection under gentle pressure of the subarachnoid of the brain does, by the medium of the lymph-canals of the nasal mucous membrane, fill the juice-canals of this membrane; and, further, that an efflux through special canals in the epithelium on the surface of the last occurs, consequently demonstrating a connection of the subarachnoid spaces of the central nervous system with the outer world. The results were not quite so complete in man, owing to the greater density and resistance of the Pacchionian bodies.

T. CLAYE SHAW, M.D.

Atlas of Skin-Diseases. By LOUIS A. DUHRING, M.D., Professor of Skin Diseases in the University of Pennsylvania; Physician to the Dispensary for Skin Diseases, Philadelphia. Part I. Philadelphia: J. B. Lippincott and Co. 1876.

In a short preface to this *Atlas*, the author declares his opinion that there is an urgent need for such a work in American medical literature; and indeed we believe that this is the first effort of the kind that has been made in the United States to illustrate this branch of pathology.

In Europe of late years much has certainly been done in this direction; for, not to mention the excellent collection of coloured wax, *papier maché*, and plaster of Paris casts to be seen in various continental museums, and now happily being formed at the Royal College of Surgeons and at several of the large schools in London, we have the grand '*Atlas of Hebra*,' the plates issued occasionally by the New Sydenham Society, and, lastly, the production in modern form of Bateman's '*Atlas*,' by Dr. Tilbury Fox.

We confess that we attach importance to these demonstrative methods, believing that faithfully executed and artistic drawings of skin-diseases afford means for ready and accurate diagnosis in many instances. We have ourselves been enabled to recognise certain rare forms of skin-affection by such means.

In this, the first fasciculus, Dr. Duhring, who,

we may mention, is one of the most accomplished and diligent cultivators of dermatology in any country, has presented us with four plates. On the next page there follows a description of the disorder depicted, with a concise account of the case from which the drawing was made. Points assisting to make the diagnosis and the treatment are also given.

The first plate is that of a case of Eczema erythematosum. This form of eczema is amongst the rarest in this country, though not uncommon in America. Milder forms of it are, however, met with not unfrequently, and are perhaps mostly confounded with forms of erythema.

The second plate is one of Psoriasis, and is admirably executed, having been drawn from a typical example of the benign or non-syphilitic form. Under the heading of treatment, we observe that Dr. Duhring does not appear to lay sufficient stress upon the value of hydrotherapeutic medication, internal or external, in this disorder. This is a plan which, we believe, is too much neglected in these cases.

Drawing number three illustrates Lupus erythematosus. The implication of the sebaceous structures is perhaps less well depicted than might be, but we imagine the subject is as 'rebellious' to the artist's pencil as the author declares the disorder to be to treatment. We are inclined to prefer long-continued administration of cod-liver oil and the occasional smart use of nitrate of silver locally in these cases, with a free allowance of a bismuth paste in the intervals.

Plate four illustrates a Pustular Syphiloderm, which is sufficiently characteristic, and the history and progress of the case which furnished the drawing are carefully recorded.

We think highly of Dr. Duhring's plates and of his text. The latter is printed on beautiful paper and in clear type. The author gives distinct evidence of honest and accurate work, and of thorough knowledge of his subject. The student could well follow no safer guide into the perplexities of cutaneous medicine than the present Philadelphia professor of that branch.

An Elementary Treatise on Diseases of the Skin.

By HENRY G. PIFFARD, A.M., M.D. Macmillan and Co. London and New York. 1876.

Dr. Piffard gives evidence in this volume of one essential requisite in an author, a thorough acquaintance, namely, with the contemporary literature of his subject. He has not only assimilated the views of the classical German, French, and English dermatologists, but has lost nothing that has been contributed to periodical publications up to a very recent period. The advantage to the reader is in some instances considerable, as for example, in the good account of the different opinions held regarding the parasitic origin of Alopecia Areata. The book does not carry the stamp of originality, but in an elementary treatise that is not necessarily a drawback.

Like all recent authors who have written in English on skin-diseases, Dr. Piffard has drawn largely on the work of Professor Hebra, whilst at the same time a tribute is paid to the French school by the adoption of the *dartres* theory. The classification of skin-diseases is a task attempted afresh by each successive author, and we are not surprised to observe that Dr. Piffard proposes his own. Those who are interested in such matters may like to know

that he divides them into : 1. Diathetic Affections ; 2. General Non-Diathetic Affections ; 3. Reflex Affections ; 4. Local Affections ; 5. Affections of Uncertain Nature.

A laboured attempt to explain the origin of the *dartres* of the French (named the *Rheumides* by our author) by faulty action of the kidneys fails to convince, because it rests solely on some theoretical assumptions, not always very clearly expressed and unsupported by direct evidence.

The chapters on some of the rarer skin-diseases which have been described by Hebra although short are clear. Dr. Piffard has avoided the pitfalls into which some English writers have lately tripped by giving in essence Hebra's own description of lichen ruber, lichen scrophulosorum, prurigo, chloasma, and some allied diseases. Adopting this nomenclature he has not confused it by an introduction of the term morphæa, which is not to be found in the book.

The volume is well got up, and the author's style is usually simple and clear. It is abundantly illustrated by woodcuts from various sources which, however, do not add much to its value. Although not likely to become a standard work, it will be read with advantage by those who do not care to study more extensive treatises. Some of the chapters might have been shorter without diminishing its value.

Practitioners will find some useful hints in the sections devoted to treatment.

NEW INVENTIONS.

GLYCERIN SOAP.

In the combination of fatty matters with alkalies forming soap, the decomposition which ensues separates the fatty acids from the glycerin base, and the water containing the solution of alkali has a greater affinity for the glycerin than for the stearate, palmitate, and oleate of soda. It follows, therefore, that the small quantity of glycerin usually found in soaps of that description is so far diluted by admixture with the water, that its emollient properties are greatly weakened. In many diseases of the skin nothing has been found more efficacious than glycerin combined with alkali on the one hand, or with a weak acid, such as boracic, on the other. The first of these is strongly recommended by Dr. Liveing to be used in acne, the latter as a lotion for general use in eczema. In fact, throughout the whole of the formulæ appended to the notes on the treatment of skin-diseases by the eminent physician of Middlesex Hospital in charge of the cutaneous department, glycerin appears to be more relied on than any other medicine prescribed. The greatest improvement in combining glycerin with soap appears to be that adopted by the well-known German soap-maker, Gustav Boehm, of Offenbach. From an examination of his glycerin soap, it would seem that he has arrived at so perfect a means of retaining the glycerin free and undiluted, that while it is certified to contain over 22 per cent. of glycerin, there is only 19 per cent. of water combined with the fatty acids and alkali. Ordinary curd soap contains 33 per cent. of water, while cocoa-nut oil soap frequently contains as much as 75 per cent. of water ; and even the far-famed Naples soap contains more than 27 per cent. of moisture. The ordinary glycerin soaps of commerce are also sometimes compounded with glycerin

of inferior quality containing impurities which are anything but beneficial when applied to the skin. This defect is entirely obviated in Mr. Boehm's Glycerin Soap, by the purity of the ingredients and the method of manufacture. By manufacturing a soap with so little water, and afterwards purifying it thoroughly with alcohol, a soap of marvellous transparency is produced, in which the free and undiluted glycerin is available for all those medicinal purposes of external application for which glycerin is so strongly recommended.

HARPER'S PATENT STEAM DRAFT INHALER.

The advantages of inhalation in the treatment of many maladies connected with the throat and lungs are too well known to require enumeration. The simple effects obtained from the application of warmth to an inflamed surface, the relief of pain which it gives, and the diminution of inflammatory action which follows, are familiar to everyone. The plan of ordering a patient to employ a jug of warm water, or even one of the inhalers in common use for this purpose, is only partly satisfactory, as there is an insufficient supply of air in combination with the steam which is inhaled to allow of its being continued without fatigue for more than a few minutes. Harper's Inhaler entirely provides for this desideratum, and is in every respect far superior to any inhaler yet introduced to the profession. It enables the patient to inhale without the least fatigue for any period prescribed, a warm vapour containing more than 90 per cent. of pure air, the small quantity of steam being sufficient to give it proper moisture. The various remedies which are used in various conditions of the throat, as in diphtheria, bronchitis, etc., may be combined perfectly with the vapour and inhaled more completely than by any other method we are acquainted with, and may be brought into contact with the affected surface in the most effective manner.

RECENT FRENCH BOOKS.

Published by A. Delahaye & Co.

- Du merveilleux, des miracles, et des pèlerinages au point de vue médical, par Grellety. Paris, 1876, in-8 de 96 pages, avec table. Prix : 2 fr. 50.
- Leçons cliniques sur les maladies de la peau, professées à l'hôpital Saint-Louis par le docteur E. Guibout, médecin de l'hôpital Saint-Louis. Un vol. in-8 de 706 pages. Prix : 8 fr.
- De la trépanation dans les abcès des os et dans l'ostéite à forme névralgique, par le docteur Simon Perret, ancien interne des hôpitaux de Lyon. In-8 de 88 pages. Prix : 2 fr.
- Du silicate de potasse dans le traitement de l'érysipèle, expérimentation physiologique et thérapeutique, observations originales, par le docteur P.-F. de Costa Alveranga ; traduit en par le docteur E.-L. Bertherand. Lisbonne, 1876.
- Discussion sur l'albuminurie et son traitement hydatique, par le docteur P. Bouloumié. Paris, 1876. Prix : 1 fr. 23.
- De l'inspectorat des eaux minérales. Nécessité de cette institution. Améliorations dont elle est susceptible, par le docteur Onésime Pouydebat. Paris, 1876. Prix : 1 fr. 50.
- Des localisations spinales du rhumatisme, par le docteur J.-L. Mora. Paris, 1876. Prix : 2 fr.
- Modifications de la phalange dans la sueur, le rachitisme et l'hippocratisme, avec 60 figures dans le texte, par le docteur Esbach. Paris, 1876. Prix : 3 fr. 50.
- Du traitement chirurgical des hémorroïdes et in particulier de la dilatation forcée, par le docteur Jean-Valère Cristofari. Paris, 1876. Prix : 1 fr. 50.
- Gravelle urinaire, de son traitement par les eaux minérales, par le docteur Gérard Delfau. Paris, 1876. Prix : 1 fr. 25.

- Contribution à l'histoire de l'hémorrhagie consécutive à l'extraction des dents, par le docteur don Louis Luigi. Paris, 1876. Prix : 1 fr. 50.
- Essai sur l'ictère grave, par le docteur Justin Dupau. Paris, 1876. Prix : 1 fr. 25.
- Contribution à l'étude de la Chorée, thèse pour le doctorat en médecine, par le docteur Hubert Guérin. Paris, 1876. Prix : 1 fr. 50.
- Étude sur la grippe, par le docteur Joseph Nebout. Paris, 1876. Prix : 2 fr.
- Du klesis génital et principalement de l'occlusion vaginale et vulvaire dans les fistules uro-génitales, pas le docteur Anatole Le Double. Paris, 1876. Prix : 6 fr.
- Des accidentes gravido-cardiaques, par le docteur J. Marty. Paris, 1876. Prix : 2 fr. 50.
- Note sur les altérations du cœur, du foie, des reins, etc., chez les aliénés, par le docteur Dufour (de Grenoble). Paris, 1876. Prix : 1 fr.
- Du diagnostic de la congestion pulmonaire de nature arthritique et son traitement par les eaux sulfureuses de Saint-Honoré (Nièvre), par le docteur E. Collin. Paris, 1876.
- Traitement de la métrite interne, par T. Gallard. Paris, 1876.
- De la péritonite idiopathique aiguë des enfants, de sa terminaison par suppuration et évacuation du pus à travers l'ombilic, par le docteur Gauderon, in-8. Prix : 50.
- Du spiropore, appareil de sauvetage pour le traitement de l'asphyxie et principalement de l'asphyxie des noyés et des nouveau-nés, par le docteur Woillez, in-8. Prix : 2 fr.
- L'introduction du système métrique dans l'ophtalmologie, par le docteur Landolt, in-8, avec figures dans le texte. Prix : 2 fr.
- Le traitement thermal de Bagnères-de-Luchon, Historique des Thermes, promenades et distractions, principales excursions ; Conseils aux malades, par le docteur Gourraud, in-12. Prix : 3 fr.
- Médecins et clients, par le docteur Notta, 1 vol. in-12. Prix : 2 fr. 50.
- Contribution à l'étude de l'hydramnios, par le docteur Guillemet, in-8. Prix : 2 fr.
- Du traitement topique de l'endométrite à l'aide du Graphidomètre ou pinceau utérin, par le docteur Menière d'Angers, in-8. Prix : 50.
- Étude sur le mouvement de désassimilation chez le vieillard, par le docteur Roche, in-8. Prix : 1 fr. 50.
- Des tumeurs hypertrophique et vasculaire de l'urèthre chez la femme, suivi d'un appendice sur le kyste du méat, par le docteur Mouton, in-8. Prix : 1 fr. 50.
- Étude expérimentale et clinique sur le thorax des pleurétiques et sur la pleurotomie, par le docteur J.-J. Peyrot, aide d'anatomie à la Faculté de médecine de Paris. Paris, 1876, in-8 de 153 pages. Prix : 3 fr.

Published by G. Masson.

- Mémoire sur les veines de la face et du cou, par Louis Chabert, ancien interne des hôpitaux, prosecteur de l'Ecole de médecine de Toulouse, in-8 de 40 pages et 2 planches coloriées. Prix : 3 fr.
- Vomissements incoercibles. Accouchement prématuré artificiel ; choix du procédé ; indications multiples remplies par le double ballon hémostatique et dilateur utérin ; rétention du placenta ; diagnostic intra-utérin ; placenta prævia ; hémorrhagie post partum ; par de docteur Chassagny. In-8 de 30 pages. Prix : 1 fr. 50.

Published by Germer-Baillière and Co.

- Leçons de clinique chirurgicale, professées à l'hôpital Saint-Louis, pendant les années 1874 et 1875. (1^{er} semestre), par M. le docteur Péan ; Suivies 1. Des observations recueillies dans le service de l'auteur du 1^{er} janvier 1874 au 1^{er} juin 1875 ; 2. De la statistique des opérations de gastro-tomie pratiquées par lui, de 1864 à 1875 ; 3. Des considérations sur la forcipressure, d'après les leçons de M. Péan, en 1874, par MM. Denis et Exchaquet. 1 fort vol. in-8 avec 40 figures dans le texte et 4 planches coloriées hors texte. Prix : 20 fr.—Le second volume qui paraîtra dans quelques mois, comprendra le second semestre de l'année 1875 et de l'année 1876. Les volumes suivants comprendront chacun une année et paraîtront le 1^{er} janvier de chaque année.

Published by J.-B. Baillière.

- Gautier (E. I. Arm.). De la coloration artificielle des vins et des moyens de reconnaître la fraude. Paris, 1876, in-8.

MISCELLANY.

DR. SIMON, Professor of Surgery in Heidelberg, has lately died.

THE University of Upsala is making preparations for the celebration in September, of the four hundredth anniversary of its foundation.

PROFESSOR ALLEN THOMSON, of Glasgow, has been elected President of the British Association for the Advancement of Science for the year 1877.

A PROPOSAL by M. Clémenceau for the appropriation of an annual sum of 13,000 *francs* to the creation of a Chair of Mental Alienation and Diseases of the Nervous System in the Faculty of Medicine in Paris, has been adopted by the Chamber of Deputies.

DR. FRANCIS SIBSON, F.R.S., formerly Physician to St. Mary's Hospital, London, and a Vice-President of the British Medical Association, died suddenly in Geneva on the 7th instant. His loss will be regretted by a large circle of friends, by whom he was held in high esteem.

COMPLIMENTARY!—It is stated that Terra del Fuego has been traversed by Lieut. Masters, R.N., who has discovered that the natives believe in devils, and hold them to be the departed spirits of members of the medical profession. The main object of their religious ceremonies is to keep these devils at a distance from them.

ANKYLOSIS OF CERVICAL VERTEBRÆ.—In a letter to the *Philadelphia Medical and Surgical Reporter*, Dr. Farnsworth, of Clinton, Iowa, says that in the examination of some ancient mounds in that vicinity, some skeletons were found, very well preserved. The tibias were very flat. In several skeletons there was an ankylosis of the three or four cervical vertebræ below the atlas. Recently several graves of the modern Sioux were opened, who died from among the prisoners held at Davenport in 1862–3, taken after the raid made on the inhabitants of Minnesota in 1862. In one skeleton the tibias were flat, in another more nearly round; in one also the same complete ankylosis of the cervical vertebræ existed.

THE LATE PROFESSOR TRAUBE.—The following sketch of the life of this eminent physician is condensed from the *New York Medical Record* of May 13. Louis Traube was born January 12, 1818, in Ratibor. He studied in the Universities of Breslau, Vienna, and Berlin; was promoted in the last university in 1840, and took his State's examination the following year. During his ante-graduate years he was at one time a colleague of Du Bois-Reymond, Virchow, and Helmholtz. In Vienna he was a most diligent pupil of Rokitansky and Skoda, who, it may be said, gave him the first incentives to those anatomico-pathological investigations which developed ultimately into the use of the thermometer and temperature registration in medicine. For three years after his graduation he acted as assistant to a physician in Voigtland, where with unusual zeal he made the clinical study of diseases of the chest and abdomen his chief pursuit. In 1843 he instituted exercises in auscultation and percussion, collected about him many physicians and students, and freed the new method of exploration, by his accurate physiological and pathological investigations, of many errors. In 1848 he was made Privatdocent in the University of Berlin; in 1849, assistant to the clinique of Professor Schoenlein, which position he held for ten years. During this time he was assigned to the department of Diseases of the Chest in the Charité, which represented, as it were, an appendix to the Schoenlein-clinique, and gradually developed into a distinct, self-sustaining clinique. In 1868 he refused a call to the University of Heidelberg, as also later similar invitations to Breslau, Zurich, and Bonn. He remained an instructor in the University of Berlin until, in 1872, it saw fit to advance him to the position of Ordinary Professor,

in which office he died. Traube is known to the scientific world as the first one who utilised thermometry at the bedside. By his students he will be remembered for his definite diagnosis, accurate prognosis, and the simplicity of his presence. He was not only a remarkable practising physician, not only a clinical teacher of rare endowments, but also a man of exact scientific inquiry, and standing in the front ranks of reformers in medical, as distinguished from surgical, theories. Though still young, he has occupied for twenty years perhaps the highest position of any consulting practitioner of medicine in Berlin, in the opinion of the public. The second half of the decade, 1840–50, witnessed here a reform in which Traube played a prominent rôle. It arrayed itself, on the one hand, against formal, dry dogmatism, which was at home in most of the doctrines of the German universities, and against the ultraism of the *à priori* system of the natural philosophy school; and, on the other hand, no less against the experiments made under the leadership of Rokitansky, in Vienna, where, until then, no man had dared to express the conviction that pathological anatomy must be the groundwork, not only of medical science, but also of medical commerce; indeed, that it contributes all which goes to make medicine, as a science, positive and fundamental. The new Vienna School displayed a triumphant banner through all Germany; and, strange enough, it encountered harsh criticism from a few hitherto unknown young physicians of Berlin. A part of these young men pursued the studies of physics and physiology, as Helmholtz, DuBois-Reymond, and others; while Traube and Virchow devoted themselves to pathology, by experiment and clinical observation. In 1846 Traube's first work, 'Contributions to Experimental Pathology and Physiology,' was published. After a quarter of a century of work in the same direction, he found no occasion to change his early results. Virchow writes, at this early time, of the independent direction of his experimental study, and of his most accurate methodical investigation. Typhus and pneumonia he studied with the thermometer in his hand. He developed the various actions of digitalis, with which Schoenlein was so pleased that he encouraged the investigation by large uses of the drug in his clinique. As in diagnosis, so in therapeutics was Traube equally exact, and never tired in busying himself with details in treatment. Naturally enough, he was one of the most successful of teachers, and as a successful clinical instructor is he best known by most of the physicians who during the past twenty-five years have been graduated at this University.

EHRENBERG.—The following notice of the late distinguished naturalist, Ehrenberg, is taken from a letter of the Berlin correspondent of the *Boston Medical and Surgical Journal*. Christian Gottfried Ehrenberg was born in Delitzsch, April 19, 1795. At the age of twenty years he went to Leipsic to study theology. The inclination of his youth, however, was to medical studies, and he remained but half a year in Leipsic as a theological student. In 1817 he came to Berlin, and matriculated in the young university. To physiological chemistry he devoted most of his time; in 1818, while yet a student, he made a contribution to the systematic study of fungous growths. His inaugural dissertation was an effort in the same direction, its topic being *Sylvæ Micologicæ Berolinenses*. It displayed independent and bold thought, and added to the physiological knowledge of these Berlin growths; it gave its author the reputation of critic of the idea, then existing, of the transformation of inorganic substances into organic. A more extensive report of his investigations into the development of fungus and mould he communicated in the transactions of the Leopold Academy of Naturalists of Bonn, in 1820. In this same year, under the auspices of the Academy of Natural Sciences, Berlin, he made a scientific tour with Dr. Hemsich, a distinguished naturalist of Berlin. During an absence of six years the Libyan Desert, Middle Egypt, Syria, and Arabia were visited; the report of these researches was published under the title,

Natural History, Travels through North Africa and West Asia in the Years 1820-1825. Soon after his return he was made extraordinary professor in the Medical Faculty of the University of Berlin. In 1829 he was selected by Von Humboldt to accompany him on his researches in Siberia, more particularly in the Ural Mountains. The expedition was fitted out with a leader in nearly every department of natural science, and furnished with money without stint. The Russian Emperor prepared relays of horses, halting-places, and every possible convenience, so long as the expedition was in his domain. The results of the two years' investigations were published together, those of Ehrenberg appearing side by side with those of the then renowned Humboldt. Continuing investigation in the department of animal physiology, he published between 1828 and 1834, under the name of *Symbolæ Physicæ*, contributions to the anatomy and physiology of the lower animals. These were known respectively as *Symbolæ Physicæ Mammalium*, *Avium*, *Insectorum*, and *Animalium Evertetratorum*. In 1835 he published an article on Phosphorescence, interesting from a scientific stand-point, together with a review of the chronological development of this remarkable phenomenon, which he attributed to infusoria. Three years later, 'Infusoria as Perfect Organisms,' 'A Glance at the Deeper Life of Organic Nature,' was published by him. This work was not only rich in new materials, but contained a systematic review of all that was heretofore known of infusoria and radiata. Though devoted to a specialty from the character of the investigation, it was so comprehensive in its range as to win the consideration and position of a text-book. In 1839 he was promoted to an ordinary professorship. This year found him elected foreign member of several scientific societies, of which the Royal Society of England paid him the most distinguished honour. Among other distinctions given him at this time of his life was his election, in 1842, as one of the thirty knights of the order of the *Friedens Klasse*, accompanied by the decoration *pour la mérité* for science and art. One of his last contributions to scientific literature was the voluminous work on mineralogical formations by microscopic organisms under the title of 'Micro-Geology.' The decadence of Ehrenberg's life was marked by a series of personal griefs, the chief of which were the death of his wife and the gradual loss of sight by cataract. He lived but a few weeks after the successful removal of the cataract, and died in the infirmity of old age. His burial was imposing in the style of its celebration, and honoured by the character of the personages in attendance. The funeral cortege was headed by the 'gala-equipage' of the Emperor, and passed through a thickly-settled portion of the town out to the Marienkirchhof. Among the nearest mourners were the elder professors of the medical, natural science, and natural history faculties.

THE ITALIAN MEDICAL ASSOCIATION.—The following subjects are to be discussed in the various sections of this association, which will be held in Turin from the 18th to the 23rd inst. *Section of Physiology.* 1. The necessity of vivisection for the progress of medico-chirurgical science, and especially of physiology. 2. Is it useful to take account in physiology, as well as in pathology, of differences of temperament, habits, and individual constitutions? 3. The teaching of physiology to youth. 4. The graphic method and its applications to medicine. 5. The action of certain alkaloids on the heart and lungs. 6. The use of the semi-circular canals. 7. The introduction of drugs into the organism; their metamorphoses and elimination. *Section of Medicine.*—The transmission of sounds through the pleuritic fluids of different kinds. 2. The results obtained by the external use of cold water in the treatment of typhoid fever. 3. Aphasia: its causes, situation, and treatment. 4. The indications and contraindications of thoracentesis. 5. The results of chemical experience of new remedies—salicylic acid, jaborandi, eucalyptus, trimethylamin, nitrite of amyl, and sulphium Cyrenaicum. 6. Hydrate of choral in rheumatic and traumatic tetanus. 7. Paracentesis of the pericardium. 8. The therapeutic value of hypodermic in-

jections in general. *Section of Surgery.*—1. Transfusion of blood: its indications. 2. Median cystotomy: its special applications. 3. Digital compression, either alone or combined with mechanical pressure, in the treatment of aneurism. 4. Subperiosteal osteoclastic, and osteoplastic resections. 5. Phosphorus necrosis of the maxillæ: the means of preventing and curing it. 6. Lister's antiseptic surgery: its indications and contraindications. 7. The treatment of wounds. 8. The value of electro-chemical and electro-thermic treatment in practical surgery. *Section of Diseases of Children.* 1. The causes, prevention, and treatment of diphtheritic angina. 2. The indications and contraindications of tracheotomy in croup. 3. Rickets: schools for rickety children, and gymnastic education. 4. Scrofula: the advantages obtained by the institution of seaside hospitals in Italy. 5. Tubercular meningitis in children. 6. The best means of establishing, near the University, hospitals for the diseases of children. *Section of Syphilography.*—1. Prevention of syphilis. 2. Are lock hospitals best managed under the direction of the State, or under that of the Provinces and Communes? 3. Are there two varieties of syphilitic ulcer, or only one? 4. The various methods of treating constitutional syphilis. 5. Syphilitic diseases of the nervous system. 6. Vaccinal syphilis. 7. The pathological conditions in the various forms of syphilis, in relation to the treatment by mercury and by iodine. *Section of Ophthalmic Surgery.*—1. The efficacy of paracentesis of the cornea in various diseases of the eyes. 2. The value of electro-therapeutics in diseases of the eye. 3. The advantages to be obtained from hypodermic injections in diseases of the eye. 4. The cause of ocular tension. 5. The treatment to be preferred in the treatment of affections of the lacrymal passages. 6. How far can science act with advantage in desperate cases of blindness arising from disease of the iris and cornea? 7. The causes and the morbid processes which may produce atrophy of the optic nerves. 8. The value of surgical operative proceedings in conical cornea. *Section of Obstetrics and Gynecology.*—1. The most simple and efficacious means of establishing obstetrical and gynecological polyclinics in large cities. 2. In regard to the question of doctresses, would it not be useful and opportune to inquire whether the theoretical and practical medical instruction at present given to midwives is sufficient? 3. The etiology and prevention of abortion. 4. The causes of the puerperal process. 5. When the mother cannot suckle her child, what is the best means of nourishing it? 6. The present state of ovariectomy in Italy. *Section of Dermatopathology.*—1. The anatomical and clinical relations between lupus, cancer, and tubercle. 2. The local and constitutional value of dermatoses. 3. Anatomico-therapeutical study of dermatoses. 4. The relation between epithelial and papillary diseases. *Section of Hygiene and Public Medicine.* 1. The climate of Rome. 2. The present conditions of cremation. 3. The best means of opposing the increasing intemperance in the use of alcoholic liquors. 4. The ideal of a city formed on hygienic principles. 5. The means of overcoming and neutralising marsh miasm. 6. The reforms which most urgently require to be adopted for the hygiene of hospitals in Italy, the obstacles to carrying them into effect, and the means of removing them.

CRUELTY TO ANIMALS.—The Act passed at the close of the Session which occasioned so much discussion on the subject of vivisection, is to amend the law relating to cruelty to animals. It extends to the United Kingdom, and has immediate operation. The preamble recites that it is expedient to amend the law relating to cruelty to animals, which for medical, physiological, or other scientific purposes are subjected, when alive, to experiments calculated to inflict pain. The law, as amended, is contained in twenty-two sections, but whether it is so clearly defined as to be understood is another question. It commences with the declaration that a person shall not perform on a living animal any experiment calculated to give pain, except subject to the restrictions imposed by this Act.

Any person performing or taking part in performing any experiment calculated to give pain, in contravention of this Act, shall be guilty of an offence, and liable for a first offence to a penalty not exceeding 50*l.*, and for a second or subsequent offence, at the discretion of the court, to a penalty not exceeding 100*l.*, or to imprisonment for a period not exceeding three months. There are general restrictions as to the performance of painful experiments on animals. The experiments must be with a view to the advancement by new discovery of physiological knowledge or of knowledge which will be useful for saving or prolonging life, or alleviating suffering; the experiment must be performed by a person holding such license from one of Her Majesty's Principal Secretaries of State, and in the case of a conditional license, or of experiments for the purpose of instruction in a registered place, the animal must during the whole of the experiment be under the influence of some anæsthetic, of sufficient power to prevent its feeling pain; the animal, if the pain is likely to continue after the effect of the anæsthetic has ceased, or if any serious injury has been inflicted on the animal, is to be killed before recovery from the anæsthetic; the experiment shall not be performed as an illustration of lectures in medical schools, hospitals, colleges or elsewhere, and shall not be performed for the purpose of attaining manual skill. There are four provisos to the restrictions which are set forth. In the other sections there are special restrictions as to painful experiments on dogs, cats, etc. Any exhibition to the general public of experiments on living animals is strictly prohibited under heavy penalties, and any person 'publishing any notice of such intended exhibition by advertisement in a newspaper, placard, or otherwise, shall be liable to a penalty not exceeding 1*l.*' The Secretary of State may license any person whom he may think qualified to hold a licence to perform experiments, and may insert the place where they are to be performed, and may require reports to be made to him of such experiments. The Secretary of State 'shall cause all registered places to be from time to time visited by inspectors, for the purpose of securing a compliance with the provisions of this Act, and the Secretary of State may, with the assent of the Treasury as to number, appoint any special inspectors, or may from time to time assign the duties of such inspectors to such officers in the employment of the Government who may be willing to accept the same as he may think fit, either permanently or temporarily.' Any application for a licence and a certificate must be signed by one or more of the following persons:—The President of the Royal Society, the President of the Royal Society of Edinburgh, the President of the Royal Irish Academy, the Presidents of the Royal Colleges of Surgeons in London, Edinburgh, or Dublin, the President of the Royal Colleges of Physicians in London, Edinburgh, or Dublin, the President of the General Medical Council, the President of the Faculty of Physicians and Surgeons of Glasgow, and the President of the Royal Veterinary, etc., but in the case only of a experiment under anæsthetics with a view to the advancement, by new discovery, of veterinary science, and also by other persons mentioned. A certificate may be given for such time or for such series of experiments. A copy of a certificate to be forwarded by the applicant to the Secretary of State, but not available until one week after a copy has been forwarded. The Secretary of State may at any time disallow or suspend any certificate given under this (11th) section. A judge is empowered to grant a licence for an experiment when necessary in a criminal case. A justice may grant a warrant on grounds that experiments are made by unlicensed persons in places not registered under the Act, with penalties to be imposed. Offences may be prosecuted in a summary manner. A person accused may elect to be tried on an indictment, and not by summary jurisdiction. An appeal is given in England to the Sessions, and the manner of procedure in Scotland and Ireland pointed out. The Act is not to apply to invertebrate animals, and the medical profession is protected by the 21st section, which declares that 'a prosecution under this

Act against a licensed person shall not be instituted except with the assent in writing of the Secretary of State.'

UNIVERSITY OF LONDON. FIRST M.B. EXAMINATION.—The following candidates have passed the recent examination.—*Entire Examination: First Division.*—Charles Edward Baddeley, King's College; James Stanley Newton Boyd, University College; Charles Alfred Dagnall Clark, St. Bartholomew's Hospital; Mark Percell Mayo Collier, St. Thomas's Hospital; James Percy Alwyne Gabb, University College; George Aldridge George, University College; William Linton Heath, St. Bartholomew's Hospital; William Manley Lory, University College; Valentine Matthews, King's College; John Edward Neale, University College; Sidney Philip Phillips, University College; John Charles Saunders, Downing College Cambridge, and St. Bartholomew's Hospital; Charles Edward Sheppard, St. Thomas's Hospital; Kenneth Rawlings Smith, University College; Howard Douglas Stewart, King's College; John Caldwell Uthoff, Guy's Hospital; Robert Spencer Wainwright, Guy's Hospital; Neville Scott Whitney, University College; David James Williams, University College.
Second Division.—William Stratford Andrews, University College; Frederic Haycraft Berry, Guy's Hospital; Frederick William Slater Culhane, University College; Donald Frederick Dymott, University College; John Thomas Faulkner, Owens College; Walter Baugh Hadden, Liverpool School of Medicine; Charles Coleman Jewell, University College; Roger Hughes Jones, Liverpool School of Medicine; Henry Edward Juler, St. Mary's Hospital; Alfred Austin Lendon, University College; George Mackern, Guy's Hospital; Herbert Lynsey Manby, Guy's Hospital; Joseph Henry Marsh, St. Thomas's Hospital; William John Notley, B.A., University of Edinburgh; George Hannah Russell, Guy's Hospital; John Reynolds Salter, University College; Thomas Steele Sheldon, Guy's Hospital; William Samuel Tuke, University College.
Excluding Physiology: First Division.—John William Meek, Guy's Hospital.
Second Division.—Frederick Rowland Barker, St. Thomas's Hospital; James Richardson Andrew Clark, University College; Richard Hughes, Owens College; George Shaw, Westminster Hospital; John Hinks Vinrace, Queen's College, Birmingham; Dawson Williams, University College.
Physiology Only: First Division.—William Henry Blake, University College; Charles Henry Cuming, University College; Samuel Thomson Plumbe, St. Bartholomew's Hospital.
Second Division.—Alfred Edgar Drysdale, University College and Liverpool School of Medicine; William James Pickup, University College; James Ryley, University College; Herbert Urmsom Smith, St. Thomas's Hospital.
Examination for Honours.—Anatomy. First Class: John Charles Saunders (Exhibition and Gold Medal), Downing College, Cambridge, and St. Bartholomew's Hospital; James Stanley Newton Boyd (Gold Medal), University College. Second Class: Charles Edward Baddeley, King's College; Charles Edward Sheppard, St. Thomas's Hospital. Third Class: James Percy Alwyne Gabb, University College; William Lenton Heath, St. Bartholomew's Hospital.—Physiology, Histology, and Comparative Anatomy. First Class: William Samuel Tuke (Gold Medal), University College; John Charles Saunders (Gold Medal), Downing College, Cambridge, and St. Bartholomew's Hospital; John Edward Neale, University College. Second Class: John Caldwell Uthoff, Guy's Hospital. Third Class: George Mackern, Guy's Hospital; Neville Scott Whitney, University College.—Organic Chemistry, and Materia Medica and Pharmaceutical Chemistry. First Class: Kenneth Rawlings Smith (Exhibition and Gold Medal), University College; John Caldwell Uthoff (Gold Medal), Guy's Hospital; Neville Scott Whitney, University College. Second Class: Frederic Haycraft Berry, Guy's Hospital. Third Class: William Manley Lory, University College.—FIRST B.Sc., AND PRELIMINARY SCIENTIFIC (M.B.)

EXAMINATIONS.—Examinations for Honours.—Chemistry. First Class: Ernest Henry Cook, First B.Sc. (Exhibition), Royal College of Science, Dublin; Robert Maguire, Prel. Sci., Owens College. Second Class: William Henry Higgin, First B.Sc., Owen's College; Thomas Gough, First B.Sc., private study; James Hugh Paul, First B.Sc. and Prel. Sci., private study; Beaven Neave Rake, Prel. Sci., Guy's Hospital. Third Class: William Fream, First B.Sc. and Prel. Sci., Royal College of Science, Dublin; Henry Thomas Groom, Prel. Sci., St. Bartholomew's Hospital; Francis Bowe, Prel. Sci., St. Bartholomew's Hospital; James Norie, Prel. Sci., University College.—Zoology. First Class: David Alexander King, Prel. Sci., St. Bartholomew's Hospital. Second Class: Arthur George Dawson, Prel. Sci., Owens College; Charles Pardey Lukis, Prel. Sci., St. Bartholomew's Hospital; Mark Feetham Sayer, Prel. Sci., University College; William Evans Hoyle, First B.Sc. and Prel. Sci., Owen's College and Christ Church, Oxford; Wayland Charles Chaffey, Prel. Sci., St. Bartholomew's Hospital; Denis McDonnell, Prel. Sci., King's College. Third Class: Robert Henry Scanes Spicer, Prel. Sci., private study; Robert Maguire, Prel. Sci., Owen's College; Henry Thomas Groom, Prel. Sci., St. Bartholomew's Hospital.—Experimental Physics. First Class: Henry Forster Morley, B.A., First B.Sc. (Arnott Exhibition and Medal), University College. Second Class: Thomas Bolton, First B.Sc., University College. Third Class: Julian Stephens, First B.Sc. and Prel. Sci., University College and private study.—Botany. First Class: Joseph Tregelles Fox, Prel. Sci., London Hospital. Second Class: Anundrao Atmaram, First B.Sc. and Prel. Sci., University College; Robert Henry Scanes Spicer, Prel. Sci., private study; John Mitford Atkinson, Prel. Sci., London Hospital; Andrew William Dallmeyer, First B.Sc. and Prel. Sci., University College; Richard Sisley, Prel. Sci., St. George's Hospital. Third Class: Charles Pardey Lukis, Prel. Sci., St. Bartholomew's Hospital; Henry Thomas Groom, Prel. Sci., St. Bartholomew's Hospital.

UNIVERSITY OF EDINBURGH.—The following candidates received the degree of Doctor of Medicine, the degree of Bachelor of Medicine, and the degree of Master in Surgery, in the University of Edinburgh, on Tuesday, August 1.

Degree of Doctor of Medicine under the New Statutes. (** Those who have obtained Prizes for their Dissertations; * Deemed worthy of competing for the Dissertation Prizes; * Commended for their Dissertations.)—With the titles of their theses: Frederick William Barry, Scotland, M.B. and C.M., 1874. Diphtheria. * Johannes Aveticion Calantariants, Armenia, M.B., 1874. The Senses and the Undulatory Theory. James Angus Cameron, Scotland, M.B. and C.M., 1867. Obstetrical Notes and Cases. * Alfred Midgley Cash, England, M.B. and C.M., 1873. A Clinical Study and Analysis of a few Cases of Carcinoma. Thomas Dodson Chalmers, England, M.B., 1869. The Therapeutic Action of Change of Climate to Tropical Latitudes in some cases of Pulmonary Disease. * Holland John Cotton, England M.B. and C.M., 1874. Three Cases of Cerebral Lesion. John Sim Cowan, Scotland, M.B. and C.M., 1871. Dyspepsia. *** Daniel John Cunningham, Scotland, M.B. and C.M., with First-Class Honours, 1874. The Spinal Nervous System of the Cetacea, with an account of a hitherto undescribed variety of Dolphin. *** Edward Harriman Dickinson, England (M.A. Oxon.), M.B. and C.M., 1870. The Phenomenon of so called 'Direct' Paralysis. * Alfred Eddowes, England, M.B. and C.M., 1873. Erysipelas. John Alexander Gailey, Scotland, M.B., 1874. Typhoid Fever. ** Alexander James, Scotland, M.B. and C.M., 1872. The Physics and Physical Diagnosis of the Respiratory Organs. Johnstone Macfie, Scotland, M.B. and C.M., 1871. Notes of a few Cases of Chorea, with special reference to the relation of Chorea to Rheumatism. *** Charles Watson Macgillivray, Scotland, M.B. and C.M., 1873. Acute

Ulcerative Endocarditis, with Experimental and Microscopic Research on the subject. William Henry Murray, Scotland, M.B. and C.M., 1874. Diseases incidental to the Puerperal State. * Robert Fairman, Scotland, M.B. and C.M., 1872. On the Physiological Antagonism of Remedies. Robert Edward Phillips, England (M.A. Cantab.), M.B. and C.M., 1874. Preventive Medicine, its importance and some of its results. Henry Walter Plant, England, M.B. and C.M., 1874. Scarlatina. * Abraham Wallace, Scotland, M.B. and C.M., 1873. Sterility.

Degree of Doctor of Medicine under the Old Statutes.—Stewart Aaron Lithgow, Scotland. Contributions to Military Surgery from the Siege of Delhi.

Degrees of Bachelor of Medicine and Master in Surgery.—(a. Indicates that the Candidate passed the Examinations with First-Class Honours. b. Indicates that the Candidate passed the Examination with Second-Class Honours.) Robert Frederick Adams, Scotland; James Anderson, Scotland; James Baker, England; George Andreas Berry, Scotland; Joseph Senior Boothroyd, England; George Victor Louis Bouchet, Mauritius; Charles Boyce, Ireland. Daniel Catlin Burlingham, England; Robert Neill Campbell, Scotland; John Theodore Cash, England; Osborne Henry Channer, India; Thomas Frederick Chavasse, England; Robert Maxwell Clark, India; William Lennox Cleland, China; Charles Alfred Coleman, Nova Scotia; James Craig, Scotland; Alexander Lesslie Curro, Scotland; Michael Dewar, Scotland; Henry Dobson, England; (a) William John Dodds (B.Sc. Edin.), England; George Augustus Emerson, India; Montague Stokes Eyre, India; John Henry Suffield Finnis, Mauritius; George Alexander Gibson (B.Sc. Edin.), Scotland; (a) David Grant (M.A. Edin.), Scotland; James Dundas Grant (M.A. Edin.), Scotland; William Thomas Grant, Scotland; James Allan Gray (M.A. Edin.), Scotland; Henry Brougham Guppy, England; John Hassall, England; Henry Hay, Scotland; John Home Hay, Scotland; Robert William Irvine, (M.A. Edin.), Scotland; William Hadden Johnson, Australia; David Johnston Jones, England; Joseph Hay Keay (M.A. Edin.), Scotland; Charles Scott Kilner, England; Robert Kirk, Scotland; William Lamb, Scotland; George Lockwood Laycock, England; John Rudd Leeson, England; Simon Linton, Scotland; William Logie, Scotland; Alexander Lyall, Scotland; William Henry Maberly, England; Peter M'Bride, Hamburg; Thomas Ranken Macdonald, Scotland; Aymer Robert M'Dougall, Scotland; Hugh M'Laren, Scotland; David Menzies, Scotland; John Bell Miller, Scotland; Byers Moir, England; James Murray, Scotland; Thomas Goodall Nasmyth, Scotland; George Ogilvie (B.Sc. Edin.), Scotland; Leslie Ogilvie (B.Sc. Edin.), Scotland; John James Pringle, Scotland; James George Robertson, Africa; John Robertson (B.Sc., Edin.), Scotland; William James Rose (M.A. Aberd.), Scotland; Arthur Pickston Russell, England; William Russell, Isle of Man; Duncan Robert Stewart, Scotland; Edwin Pringle Thew, England; Abraham Garrod Thomas, Wales; Thomas Edgar Underhill, England; John James Underwood, England; Alexander Walker, Scotland; David Wylie Wallace, England; Bryan Charles Waller, England; Vincent Wanostrocht, England; Charles Henry Waterhouse (B.A. Lond.), England; Charles Scott Watson, Scotland; John Douglas Watt, Scotland; William Henry White, England; John Henderson Wright, Scotland; Alfred Harry Young, England.

Degree of Bachelor of Medicine.—Edward Leopold Baker, England; Arthur Richard Barnes, England; William Galletly, Scotland (received the degree April 20, 1876); William Henry Montgomery, America; Hans Jurgens Moolman, Cape of Good Hope; Robert Roxburgh, Scotland; (b) Andrew Smith, Scotland; Charles Edward Henderson Warren, England.

Degree of Master in Surgery.—Thomas Harker, England (received the degree April 20, 1876); John Bisset Smith, M.B. 1873 (M.A. Aberd.), Scotland. The Ettles prize was awarded to David Grant, M.A., M.B., C.M.

The London Medical Record.

Authors of Papers, Theses, &c., will assist in the preparation of summaries by our reporters, by forwarding separate copies of their works.

BOWDITCH ON THE FORCE OF CILIARY MOTION.

Dr. H. P. Bowditch, Professor of Physiology in Harvard Medical School, writes as follows in the *Boston Medical and Surgical Journal* for August 10.

Most observers who have studied the movements of cilia have directed their attention to the evidence of ciliary activity, afforded by the rapidity with which very light bodies are carried over the surface of the ciliated membrane. Thus Valentin (Wagner's 'Lexicon,' vol. i. p. 506) observed that the capsules of mucus on the gills of Anodonta were carried forward at the rate of four millimètres in one minute. Engelmann ('Flimmerbewegungen,' p. 70), in studying the various conditions which affect ciliary activity, made observations on the rapidity with which a small globule of sealing-wax, suspended by a light silk thread so as to merely touch the membrane, was moved forward over the ciliated surface. The rate varied in his observations from 7·8 to 24·5 millimètres in one minute. Calimburces (*American Naturalist*, vol. v. p. 611), also, in constructing his apparatus for measuring ciliary movement, made all the parts as light as possible, in order to reduce the work done by the cilia to a minimum.

The late Jeffries Wyman (Bernard, 'Les Tissus vivants,' p. 141) was the first to call attention to the fact that the force exerted by cilia is by no means inconsiderable. He describes his experiments on frogs as follows. 'The mucous membrane being carefully dissected from the roof of the mouth is pinned to a board. A piece of skin from near the throat of the frog, and from one third to half an inch square, is placed upon this membrane with the inner surface in contact with the cilia, it being kept in mind that these vibrate from before backwards towards the throat. On the skin may be placed a plate of lead of somewhat smaller size. This serves as a vehicle to which weights may be added at will to increase the load. . . . Pains should be taken to have the board on which the experiment is made perfectly horizontal, otherwise a sliding motion, especially when heavy weights are used, may come in to vitiate the experiment.' The rate of movement was determined either by direct observation of the lead 'vehicle' with its load, or by means of an index attached to the axle of the smaller of a pair of light cog-wheels, the 'vehicle' being connected with the apparatus by means of a thread coiled round a drum on the axle of the larger wheel. By experiments performed in this way it was found that a weight of 13 grammes was carried 15 millimètres in about one minute, the weight resting on a surface of 12 millimètres square, and that 48 grammes, resting on a surface 14 millimètres square, moved, though very

slowly, across the whole length of the membrane; but the exact time was not noted.'

It will be noticed that in these experiments the work done by the cilia consisted in overcoming the friction of the skin upon the membrane and of the parts of the index-apparatus on each other, and that the amount of this work, though increased by the addition of weights to the lead plate, was not, and could not well be, accurately determined. The weight being moved in a horizontal plane, there was no direct performance of work which could be measured by foot pounds or kilogrammètres. In view, however, of the evidently very considerable force of the ciliary movement, it seemed important to determine the maximum of work which could be performed in a given time by a given surface of ciliated membrane. The simplest way of accomplishing this object seemed to be to repeat Wyman's experiments, with the modification of giving to the board on which the membrane rested an inclination which would compel the cilia to move a weight resting upon them up an inclined plane. Then the product of the weight by the height through which it was lifted would give the value sought.

After several preliminary experiments, an apparatus was constructed, consisting of a piece of thin board about 11 centimètres square, with a narrow strip of wood about 7 millimètres in thickness fastened at the middle of one edge. A strip of glass 4·5 centimètres long, by 1 centimètre broad, with edges smoothed on a grindstone, was firmly cemented by one end to the middle of the strip of wood, and thus projected over the surface of the board, parallel to, and 7 millimètres from it. A frog with brain and spinal cord destroyed was then prepared as follows. A transverse incision, about 1 centimètre long, was made through the mucous membrane of the roof of the mouth as far forward as possible. The free end of the glass strip was inserted into this incision, and pushed back between the membrane and the bones of the palate. The lower jaw was then cut away, and the œsophagus laid open as far as the stomach. The cut edges of the œsophagus were kept extended by pins thrust through them into the board below. The frog thus lay upon the board with the body under the strip of glass, and the ciliated membrane from the anterior edge of the palate to the stomach smoothly stretched over it, and accessible to observation and experiment. A vehicle to be moved by the cilia was made by cementing a small oval piece of glass of 1·437 square centimètres area to a thin piece of wood of the same size. The glass surface was then covered with a piece of frog's skin stretched over it, with the inner surface outward, and held in place by a thread tied round it and lying in a groove cut in the end of the wood. This vehicle, when placed with the skin downward upon the ciliated membrane, was readily carried along toward the stomach. The work done by the cilia could be increased either by placing weights upon the vehicle, or by inclining the whole apparatus so that the vehicle should be carried up an inclined plane. The latter object was readily effected by means of a wedge pushed under the edge of the board opposite to the point where the glass strip was fastened. The wedge was so graduated that in every position it could be seen at a glance what proportion of the distance moved over by the vehicle was movement in a vertical direction. The movement of the vehicle was observed with a microscope of low power, furnished with an eye-piece micrometer. The

draw-tube of the instrument was so adjusted that thirty divisions of the eye-piece micrometer corresponded to 1 millimètre in the field of vision. A stop-watch was used to determine the time occupied by a chosen point on the vehicle in passing over these thirty micrometer divisions.

It will thus be seen that the data of observation in our problem were as follows :

a = grade per cent.; *i.e.*, the movement in a vertical direction expressed as a percentage of the distance moved, and determined by a simple observation of the position of the wedge.

b = weight in grammes of the vehicle and the load placed upon it.

c = time occupied by the vehicle in moving one millimètre.

d = area in $\frac{\text{centimètres}^2}{\text{centimètres}}$ of the surface of the vehicle

applied to the ciliated membrane.

The value to be determined by means of these observations was the amount of mechanical work, expressed in grammillimètres,* which was performed by one square centimètre of ciliated membrane in one minute. If we express this value by x we shall have the formula,—

$$x = \frac{a}{100} \times b \times \frac{60}{c} \times \frac{1}{d} = \frac{6ab}{10cd}$$

This formula expresses, of course, only the work done in raising the vehicle with its load. A certain amount of work is also performed in overcoming the friction of the vehicle on the membrane; but this amount is very difficult to determine, because the moving force is generated at the same point where the friction is applied. It is probably small in comparison with the work of raising the vehicle, and it was therefore disregarded.

A modification of the experiment consisted in placing the board in a perpendicular position, so that the vehicle, held in contact with the membrane by capillary attraction, was carried vertically upward. In this case $a = 100$, and the above formula becomes $x = \frac{60b}{cd}$. In order to obtain as great uniformity as

possible in these observations, it was, of course, important to avoid drying of the membrane. For this purpose a 0.5 per cent. solution of common salt, made very slightly alkaline with sodic hydrate, was applied from time to time to the membrane. The results were nevertheless by no means so uniform as could be desired. The following table may serve as an example of the experiments. In this case the grade was at first kept constant at 10 per cent., and weights of 5, 10, and 20 grammes placed successively upon a vehicle weighing 0.534 gramme. Afterward the board was placed in a vertical position, and observations were made on the rate at which the vehicle alone was carried upward.

It will be seen from the table, that by loading the vehicle the rapidity of its movement was diminished, but not in proportion to the increase of the weight. In other words, the greatest amount of work was obtained with the heaviest load. Thus the cilia, when compelled to carry a weight of 20.534 grammes up a grade of one in ten, performed in one minute for each square centimètre of surface an amount of work equal to 6.805 grammillimètres. This was the

maximum of work obtained in upward of one hundred observations made with various weights and grades; but it is not probable that it is the maximum of work which cilia are capable of performing. It is perfectly possible that under somewhat different conditions they may work to much better advantage.

A. Grade. Per cent.	B. Weight. Grammes	C. Time. Seconds	D. Area. Centimètres ²	$x = \frac{6ab}{10cd}$ Grammilli- mètres
10	10.534	10.8	1.437	4.074
10	10.534	7.4	1.437	5.940
10	20.534	15.	1.437	5.718
10	0.534	3.	1.437	9.743
10	5.534	5.6	1.437	4.127
10	5.534	5.	1.437	4.622
10	10.534	8.5	1.437	5.176
10	20.534	12.6	1.437	6.805
10	20.534	12.6	1.438	6.805
100	0.534	5.3	1.437	4.208
100	0.534	4.2	1.437	5.310
100	0.534	3.8	1.437	5.868
100	0.534	4.4	1.437	5.067
100	0.534	4.8	1.437	4.646
100	0.534	5.	1.437	4.460
100	0.534	5.	1.437	4.460

It will be noticed, for instance, in the above table, that, when carrying the unloaded vehicle vertically, they performed an amount of work nearly equal to the maximum obtained in carrying heavy weights up an inclined plane. It is not improbable that by altering the size, weight, or shape of the vehicle, conditions may be found under which the cilia may perform a greater amount of work than that here recorded. The investigation of this question will be the subject of a future series of experiments.

The statement that a ciliated membrane performs, per square centimètre per minute, 6.805 grammillimètres of work, gives a very imperfect idea of the force of the moving cilia, unless we obtain a conception of the bulk of the organs where this force is generated. It is generally believed, though not absolutely demonstrated, that the force which moves the cilia is generated in the protoplasm of the ciliated cells. These cells in the frog's mouth are spherical in form, with the cilia upon one side. The average of nine measurements gave a diameter of 0.016 millimètres, which agrees very well with Valentin's figures. If we imagine spherical cells of this size placed close together on the surface of the membrane, the volume of the cells on one square centimètre of surface will be 1.6 cubic millimètres, and their weight, if we suppose them to have the specific gravity of water, will be 0.0016 gramme. Thus we see that a mass of protoplasm weighing 0.0016 gramme performs in one minute an amount of work equal to lifting 6.805 grammes to the height of one millimètre. This is equal to lifting 0.0016 gramme to the height of 4253 millimètres. In other words, the ciliated cells perform in one minute an amount of work equal to lifting their own weight to the height of 4253 metres. It is interesting to compare this value with that obtained for the striated muscles of the heart. The work performed by the heart at each pulsation is equal to the weight of the blood expelled by the contraction multiplied by the height of a column of blood which measures the tension in the aorta and pulmonary arteries. From these data Schiff ('Physiologie de la Digestion,' vol. i. p. 24), has estimated that the heart does in one minute an amount of work

* This small unit of work was chosen merely for the sake of convenience in writing the results. It is, of course, one millionth of a kilogrammètre.

equal to lifting its own weight to the height of 150 mètres, a value more than thirty-five times as great as that above given for the ciliated epithelium.

WARREN ON VAGINAL LITHOTOMY.*

The following article is published by Dr. J. Collins Warren, surgeon to the Massachusetts General Hospital, in *The Boston Medical and Surgical Journal*, for July 20, 1876. We have made some slight abridgments.

In August last I was requested by Dr. Alexander Jackson, of Plymouth, to operate upon a case of calculus in the female bladder. The patient was sixty-seven years of age, and when I saw her for the first and only time, on the day of the operation, was in bed, appearing much emaciated and pale. She had been suffering greatly with symptoms of cystitis for the better part of a year, and, although previously healthy, had become a confirmed invalid. There were no symptoms of renal complications. She was the mother of several children. The patient, being etherised, was placed in the position for lithotomy in the male, and a lithotrite was introduced into the bladder for the purpose of determining the size of the stone. The examination showed that it was not a small one, and in view of the degree of inflammation of the bladder and her advanced age I decided to remove it by vaginal lithotomy. The operation was thus performed with the assistance of Drs. Stedman and Jackson. A large bulb-pointed probe was passed into the bladder, and its end made prominent beneath the mucous membrane of the anterior wall of the vagina, at a point just behind the neck of the bladder. An incision was made into the bladder at this point, the knife cutting against the end of the probe. A pair of probe-pointed scissors were introduced into the opening thus made, and the incision was enlarged backwards along the median line to the extent of one inch. The stone was extracted by a pair of polypus forceps. The bladder was then washed out with warm water, and the edges of the wound were brought in contact with six silver wire sutures. A female catheter was retained in the bladder, and the patient left in charge of Dr. Jackson, from whom I subsequently learned that she at first did well, and no urine passed through the wound. Two weeks after the operation there were symptoms of abdominal inflammation, and some leakage occurred through the wound. Two months later the condition of the patient had improved greatly, and under the application of caustic the slight fistula which still remained had closed, but had reopened at the end of forty-eight hours; Dr. Jackson had no doubt, however, that it would eventually close. Under the date of March 28, Dr. Jackson writes, 'Mrs. R. is about, feeling quite well, with the exception of a little cold recently.' The stone (examined by Dr. E. S. Wood) contained a nucleus, which was about the size of an almond-shell, consisting of oxalate of lime, its surface being coarsely crystalline. The cortical portion which was broken into several fragments during the examination, was phosphatic. The weight of the stone was 214 $\frac{3}{4}$ grs.

Vaginal lithotomy, or vesico-vaginal lithotomy, as it is sometimes called, is no novelty, although the operation has been much more frequently performed since the treatment of vesico-vaginal fistula has been

brought to its present degree of perfection. The employment of sutures to close the incision connecting the bladder with the vagina, has placed the operation on an altogether different footing. The first operation was performed by Rousset in the latter part of the sixteenth century, in a case of proctentia and cystocele, in the *cul-de-sac* of which was found a stone. Fabricius Hildanus removed a calculus through a vesico-vaginal fistula, caused by its presence in the bladder, in 1598. The operation was performed in the last century, and also in the early part of the present century, and was almost invariably followed by incontinence of urine resulting from fistula. Faure is, however, reported in 1808 as having avoided a fistula by cutting obliquely through the septum, and thus making a valvular opening into the bladder. The first case in which sutures were employed to close the incision occurred, so far as I can discover, in the practice of Dr. Marion Sims. A fistula remained, however, which was subsequently closed by Bozeman. This is probably the operation performed by Sims in 1850. Vallet, of Orleans, employed sutures in two cases in 1856. An interesting historical account of the various operations for stone in the female is given by Hybord (*Des Calculs de la Vessie chez la Femme et les petites Filles*. Paul Hybord. Paris, 1872). In 1853 Dr. William G. Wheeler (*American Journal of the Medical Sciences*, xxv. 361) of Chelsea (U.S.) removed a stone weighing two ounces and three-quarters, which had formed about a hair-pin three and one half inches in length through an incision in the septum. Sutures were not used, but the remaining fistula was closed many years afterwards by Dr. R. M. Hodges. Lithotomy was tried in this case without success. A case may be mentioned in this connection, occurring in the practice of M. Panas (*France Médicale*, February 26, 1876), who extracted a hair-pin from the bladder by forcing it through the vesico-vaginal septum. The puncture of the septum occurred accidentally during efforts at extraction through the urethra. The pin was drawn into the vagina, straightened, and removed. In four days the patient left the hospital, no trace of the puncture remaining. Dr. R. M. Hodges performed vesico-vaginal lithotomy sixteen years since, closing the wound by suture with complete success. Dr. Emmett has performed this operation more frequently than any other surgeon; and it is a curious fact that in nearly all of his cases the calculus had formed after an operation for the cure of vesico-vaginal fistula. In nearly every case, the cystitis was sufficiently severe to necessitate leaving the opening unclosed after removal of the stone. In some cases measures were taken to prevent closure of the wound, and when this was not done the wound healed invariably within two weeks. Dr. Emmet ('Chronic Cystitis in the Female,' *American Practitioner*, February, 1872) has treated a number of cases of chronic cystitis in the female by an incision through the vesico-vaginal septum. The wound was kept open by a hollow glass stud, not unlike a spool in shape. He thinks the operation, if resorted to before the disease has advanced so far as to involve the kidneys, is as free from risk as any minor surgery. He is satisfied that any one who has the dexterity properly to crush a stone by the female urethra can with much less difficulty close the fistulous opening after lithotomy.

This operation has rapidly increased in favour with many English surgeons. Dr. Aveling (*Obstetrical*

* Read before the Massachusetts Medical Society.

Transactions, 1864, v. 1) was one of the first to call attention to its advantages when followed by suture. He gives a table of thirty-four cases, and adds one operated upon by himself. Twelve of these were performed by English surgeons. In all of them there is but one death recorded. In twelve given by Hybord no death occurred. Aveling believes that, although lithotomy ought not to supplant the more simple process of dilatation and crushing, it should be employed when there is the least apprehension of incontinence. Mr. James R. Lane (*Lancet*, January 10, 1863) operated upon a case in which the stone was nearly two inches in length, dividing the septum to within a short distance of the attachment of the vagina to the cervix uteri. The patient recovered eventually without a fistula, although the edges of a small portion of the wound had to be pared and sewed together subsequently. He thinks there is no part of the vesical parietes which may be incised with so little risk, and that this operation is the safest and best which has yet been devised.

This procedure has not been confined to the adult. A number of cases have been reported where it was performed upon young children. Of these may be mentioned one by Mr. Thomas Smith (*Lancet*, December 17, 1870), the child being but five years of age. The incision was made and the sutures taken without rupturing the hymen. In a second case, in a patient ten years old, he made an incision through the fourchette before cutting through the septum; four sutures were taken in the vaginal wall, and three in the perinæum. The patient recovered without incontinence. Dr. S. H. Tewksbury ('Transactions of the Maine Medical Association,' 1871) removed a stone of the size of a pigeon's egg, through the septum, from the bladder of a girl seven years of age. The vagina was dilated gradually, and a small Sims's speculum was introduced, which brought the parts well into view. The sutures were removed on the fourteenth day, when the wound was found united. Dr. Tewksbury's paper contains much valuable information in regard to the history of the operation. He thinks that dilatation of the urethra is available in females who have borne children.

The operation has been performed by a number of American surgeons. Indeed, it seems to have been done more frequently in this country than in any other. Through the kindness of Dr. C. H. Mastin, of Mobile, Alabama, I have obtained a list of surgeons, with the number of cases operated on by them, thirty-five in number. Dr. Mastin speaks of six other cases, the names of the operators not being given, making in all forty-one cases.

I have recently obtained the notes of a case performed by Dr. H. O. Marcy, of Cambridge (U.S.), in April 1874. The patient, since her confinement, in February 1873, had suffered from cystitis. After an attempt at crushing, having first dilated the urethra, and failing through the size and hardness of the calculus, vaginal lithotomy was performed. The incision was made in the median line, commencing about one inch from the urethra, and was continued to include a small portion of the cervix uteri, to allow the extraction of the stone, which weighed over one ounce, and was rough and hard. It was chiefly phosphatic, and contained as a nucleus a few fibres of cotton. The wound was brought together with fine silver sutures, and united in its entire extent. A minute opening was left, however, at the point of entrance of one wire, which has not closed, although an attempt has since been made to close it.

It will be gathered from the testimony given above, that lithotomy is not a difficult operation to perform on the female. This fact appears to have struck forcibly all operators at their first effort, and none more so than myself. The patient being placed in the position for lithotomy, when the labia were separated the anterior wall of the vagina was seen hanging like a curtain at the mouth of the vagina. So superficial was this part, that it could be incised and sewed with nearly as much facility as the perinæum. The operation appears to be attended with little or no danger, hardly a single death being reported; on the contrary, in cases where the attending inflammation is severe, we find that it not only removes the cause but exerts a curative influence upon the inflammation itself, provided we simply avoid using the suture. The only real danger is from a failure of union of the wound; and this, with our present knowledge of the treatment of vesico-vaginal fistula, has been reduced to a minimum. Incontinence resulting from this cause is far more easily remedied than that which follows from over-distention and paralysis of the urethra.

A very old method of removing calculi from the female bladder, and one which has been growing greatly in favour of late, is extraction through the dilated urethra. Franco ('*Traité des Hernies*,' p. 140) proposed this operation in 1561. Collot combined dilatation with crushing in 1669. This was a favourite method with Sir Astley Cooper, who performed it three times without incontinence resulting. Dr. Yelloly (*Medico-Chirurgical Transactions*, vol. vi. 1815) mentions a number of cases where stones of extraordinary size have passed the urethra. In a case which occurred in his own practice the stone weighed over three ounces. In another case the patient, having suffered greatly, and after having experienced 'an uncommon weight and forcing' on one occasion, brought away, 'with a noise which very much surprised the whole company,' a stone seven and a-half inches in circumference. In all the cases given by him there was permanent incontinence subsequently. This danger of incontinence appears to have been recognised at an early period. Tolet ('*Traité de la Lithotomie*,' Paris, 1708) found that, if dilatation were excessive, the fibres of the urethra could not contract, and incontinence followed. Brodie ('*The Works of the late Sir Benjamin Brodie*,' ii. 649) says, 'I suspect that there is no method of removing it entire from the female bladder, without incontinence of urine to a greater or less extent being a consequence of the operation.' Vaginal lithotomy with suture was of course not then known. In three out of ten cases mentioned by Hybord, there was incontinence subsequently. Mr. Bryant (*Medico-Chirurgical Transactions*, vol. xlvii.) reports two cases of calculus removed by rapid dilatation, which was effected by Weiss's dilator. In his first case the shortest diameter of the calculus was one inch, and the age of the patient fifty-two years. In the second case, although the stone was caught in one of its shortest diameters, it measured with the forceps exactly two inches. The patient was thirty-five years old. In both cases was control gained over the bladder for several hours. Mr. Bryant has collected twenty-eight cases, in thirteen of which slow dilatation was employed, and in fifteen rapid dilatation. Among the former there were four cases of incontinence; in three of these, however, the stone was very large; among the latter there were none. He much prefers rapid dilatation, and states that 'in

children calculi one inch in diameter, and in adults two inches, may be safely removed by these means.' Mr. Bryant extracted a lady's stiletto from the bladder, guiding it by the finger introduced through the urethra. No incontinence followed.

Spencer Wells cautions against dilatation. A large stone, he says, may be removed and no incontinence follow, but incontinence might result from the removal of a very small calculus. (In one of Bryant's cases of incontinence, the stone was not large.) Incisions into the urethra he thinks more dangerous still, and mentions cases in the practice of a surgeon of large experience where it had been done in two adults and seven children, but 'they were all dribblers.' He prefers lithotomy. Lane is decidedly of the opinion that dilatation of the urethra should be employed only in the removal of stones of small size, the risk of incontinence being great, and the result incurable. The facility of dilatation renders it highly tempting to the surgeon, while the safety and bloodlessness commend it strongly to the patient. The consequence is, that it has caused many an unfortunate woman to pass the rest of her days in a loathsome and miserable condition. No stone, he thinks, larger than an acorn should be removed in this way from the adult, and none larger than a horse-bean from a child. He condemns strongly all incisions into the urethra.

When a stone is suspected, Christopher Heath (*Medical Times and Gazette*, April 11, 1874) does not hesitate to explore the bladder with the forefinger, previously introducing the little finger or dilating with the dressing forceps. He finds in all cases that have undergone this manipulation a split in the mucous membrane under the pubes, and some incontinence for twenty-four hours. After this, the patient ordinarily recovers complete control over the bladder. In one case a stone three-fourths of an inch in diameter was removed from a child, aged eleven years, through the urethra, and subsequently a fragment of a second stone, weighing 408 grains. Incontinence in this case was permanent. For such a case, he would recommend vaginal lithotomy. He cautions against the mistake of making the incision too small, the edges of the wound being bruised by a stone too large to pass through easily. He thinks there is no danger of wounding the peritoneum, even if the incision be carried up to the os uteri. In taking sutures both the vaginal and vesical walls should be included. He has operated three times; in two cases the wound healed by first intention, in the third there was a slight fistula. In one of the successful cases the calculus weighed three and one-half ounces. The ages of the patients were forty-nine, forty, and fifty years respectively (*Transactions of the Pathological Society*, vol. xxvi.).

During the past year, medical writers have had a great deal to say about the treatment of cystitis by dilatation of the urethra. Dr. T. W. Howe (*New York Medical Record*, August 14, 1875) reported a case of cystitis cured in this way. Mr. Pridgin Teale has written on the subject in the *Lancet* for November 27, 1875. He and several of his colleagues have employed this treatment for some time past with satisfactory results. This method consists in slowly dilating the urethra by a Weiss's dilator, until the fingers can be introduced into the bladder. It is noticeable that in three instances death occurred within a short time after the operation; there was in these cases, however, disease of the kidneys. Two cases suffered from incontinence afterward, and Mr.

Teale makes the significant remark, 'It does not, however, appear that the liability to permanent incontinence depended upon the degree to which the dilatation was carried.' Hewetson (*Lancet*, December 4, 1875) and Heath (*Lancet*, December 11, 1875) have both written upon the subject. Dr. George Jewett (*The Journal*, January 27, 1876) removed a crochet-needle by introducing the index finger into the bladder through the urethra. He noticed a slight rupture at the meatus during his manipulations, but there was no incontinence. The most accurate measurements which have been taken to determine precisely how much the urethra may be dilated without running the risk of incontinence are those made by Professor Simon, of Heidelberg, and published in Volkmann's *Sammlung Klinischer Vorträge* (translated in the *New York Medical Journal*, October, 1875) in July last. He recommends smooth, hard India-rubber plugs of different sizes, by which, when combined with incisions of the orifice of the canal, dilatation may be accomplished without rough handling of the urethra. This limit is two centimètres or 0.8 inch in width, and 6.3 centimètres or 2.4 inches in circumference. Dilatation to this size permits the index fingers of most surgeons to be passed with ease into the bladder. Simon's finger was small enough to enable him to pass at the same time a very slender instrument. A pair of polypus-forceps, such as Mr. Heath uses, would, if introduced at the same time with the finger, as he recommends, stretch beyond this limit. A stone must obviously be a small one to be removed by an instrument delicate enough to pass so narrow a space. Hyjord puts the limit of dilatation as high as three or four centimètres. Dr. W. W. Lawrence reports in the *Louisville Medical News* a case of a stone in a girl five years of age. The urethra was dilated with the fingers, and crushing was combined with extraction. It is not stated whether there was any subsequent incontinence. Dr. D. W. Yandell reports in the same journal a case of bilateral urethral lithotomy in a girl eleven years old. The stone was crushed before removal, and weighed two ounces. There was perfect recovery. In a second case, a girl four years of age, the urethra was divided on a director a short distance behind the meatus, for the extraction of a uric acid calculus the size of a filbert. Incontinence is not mentioned. Dr. Hergott, in an article in the *Annales de Gynécologie*, January 1876, gives three cases in which dilatation was practised for removal of growths from the bladder. An instrument was introduced with the finger, and the operation was continued in each case upwards of an hour. The limit given by Simon was not exceeded, and no incontinence followed. In one case, the author contemplates removing a remaining portion of the growth through an incision in the vesico-vaginal septum. He mentions several cases where coitus was performed through the urethra. Mention of this fact has also been made by other authors. Incontinence of urine was not present in these cases. Notwithstanding that many successful cases of dilatation with or without crushing have been reported, a high authority in America expresses himself strongly against this operation. Dr. Emmett, in his work on vesico-vaginal fistula, says, 'Comparatively, I do not regard the removal of stone in the female by the urethra as either a safe or a justifiable operation, in consequence of the great risk of incontinence of urine which frequently remains permanent. I have seen at least

seven cases in support of this assertion for which no relief could be afforded, and in which I am satisfied that the accident had not resulted from want of skill on the part of the operator.'

An interesting clinical lecture by Dr. Hunter McGuire (*West Virginia Medical Student*, May, 1876), gives the history of a case of vaginal lithotomy in a negress forty years of age. The stone was two and a half inches in diameter. Ten wire sutures were taken and removed on the eighth day, a catheter being retained a few days longer for safe union. Dr. McGuire states that many cases of so-called successful operations by dilatation and extraction have, to his personal knowledge, been followed by incontinence, the term 'successful' referring to the extraction of the stone. He says, 'We all know how easily a surgeon can introduce his finger into the female bladder when the woman is under the influence of chloroform,' 'but it certainly is not always safe to do this.' In a case at present under his care, a lady twenty-four years of age had been suffering from chronic cystitis, which resisted the usual remedies, and the physician had introduced his finger through the urethra to explore the bladder. Complete incontinence of urine followed. On examination, he found the meatus contracted to probably its original size, but the vesical end of the urethra and mouth of the bladder loose and relaxed, with all sphincter power destroyed. He proposes to make a vesico-urethra-vaginal fistula by removing an elliptical-shaped piece of the septum, and to close it by silver wire sutures in the ordinary manner. He does not believe it is ever necessary to introduce the finger into the female bladder for the sake of diagnosis. A stone over half an inch in diameter should not be removed *per urethram*. He condemns urethral lithotomy as leading almost invariably to incontinence. Lithotripsy, he thinks, is more difficult than in the male. The absence of the prostate gland and of the smooth fixed trigone which we find in the male bladder, the slight prolapse of the posterior wall found in almost all women who have borne children, the sometimes sacculated or perhaps displaced bladder, are some of the more important explanations of this difficulty. Byford is opposed to lithotripsy for similar reasons. Dr. Savory, of Lowell, informs me that he has had a case of incurable incontinence following dilatation for the removal of a stone of small size.

Sponge-tents have been employed to dilate the urethra for the purpose of removing calculi. They may be useful when the patient dreads anaesthesia, or when the stone is so small as to be voided spontaneously by the bladder on removal of the sponge. This occurred in a case in the practice of Dr. George H. Bixby, of Boston, where eleven small calculi came away upon the removal of a sea tangle tent. Dr. H. R. Storer has lately removed a calculus in this way without incontinence subsequently.

Dr. Buchanan of Glasgow, (*Medical Times and Gazette*, May 3, 1862), has performed the operation known as lateral lithotomy on a girl six years old. The operation resembles closely that performed on the male. A rectangular staff being introduced and held under the arch of the pubis, an incision is made into the left nymphæ, care being taken to avoid opening the vagina on the one hand and cutting too near the tuber ischii on the other. The left forefinger, introduced into the wound, feels with its nail the staff, and the knife guided along the nail is passed through the neck into the bladder. In his case there

was some difficulty in retaining the urine at the last account. Dr. Morton operated in this way on six cases, with what is stated to be a favourable result. Mr. Lane believes it to be an excellent operation, and admirably adapted for children. Dr. David Foulis (*British Medical Journal*, no. 786, page 115), made a dissection of the bladder of a woman on whom this operation had been performed twenty years before, and who died of renal dropsy. A conical opening was found in the left labium minus, from which ran a canal opening into the urethra and also into the vagina. The patient had been able to retain her urine, however.

In examining the records of the Massachusetts General Hospital, I find from 1821 to 1868 seventy-nine cases of stone reported, of which nine were in females. From 1821 to 1871, a period of fifty years, there were but ten cases of stone in the female. Of these calculi two were extracted through vesico-vaginal fistulae, one being removed entire, the other being crushed previous to extraction. Five were treated by lithotripsy, and in three cases the stone was extracted through the dilated urethra. Of the latter, one was a stone weighing two hundred and eighty grains; the urethra being dilated, it was seized by a pair of forceps and attempts were made to crush it, but without success. It was finally extracted through the urethra. Death occurred two days later, and at the necropsy the urethra was found considerably dilated, and in that portion below and a little on the right of the arch of the pubis was an irregular laceration more than one inch in length, extending into the bladder. It had the appearance of being due to sloughing of the part. The ureters were dilated and the kidneys diseased. In the two cases the urethra was found considerably dilated before the operation. In one a stone three-fourths of an inch in diameter was extracted and no incontinence followed. In one case three calculi were extracted, one being the size of a large peach-stone. There was a small fistula in this case, which was subsequently operated upon. The records of many patients operated upon during this period are not to be obtained, they having been treated as out-patients. Dr. C. B. Porter has recently removed a calculus from the female bladder through the dilated urethra. The calculus was partially crushed previous to extraction. Dilatation was not carried beyond Simon's limit. There was no incontinence.

There are several methods of treating stone in the female which have not been discussed in this paper. Lithotripsy, for instance, has been scarcely alluded to. My object has been to contrast the operation of vaginal lithotomy with one which has been employed in a class of cases to which that operation is mainly suited, and to discuss the comparative merits of two methods of operating which are now coming into fashion.

WATSON ON A SUPPOSED CASE OF CANINE RABIES TREATED WITH STRYCHNIA AND WOORARA; RECOVERY.

Dr. B. A. Watson, Surgeon to the Jersey City Charity, relates the following case in the *American Journal of the Medical Sciences* for July, 1876. On February 6, 1876, between ten and eleven A.M., Dr. Watson was summoned in great haste to see Mr. McC., of Jersey city, aged about forty-five, a strong, able-bodied man of temperate and industrious habits, who had previously enjoyed uniformly good

health. He found him in his sleeping apartment, suffering from a severe chill, which was accompanied by chattering of the teeth, violent retching, and the occasional vomiting of a little dark grumous fluid. There were suffusion of both eyes, equal dilatation of the pupils, marked congestion of the conjunctiva of the right eye, but slighter of the left, turgescence of the vessels of the face, giving the countenance a livid appearance. Respiration was sighing, pulse frequent and irregular, and the tongue furred, greyish white. He was highly nervous, apprehensive, and unwilling to be left alone. He said 'there is a sensation of tightness or squeezing' over the præcordial region. In answer to a question, 'How do you feel?' he replied, in a nervous, jerking voice, 'I am all right—nothing the matter with me.' He then called for a glass of water, which he took and tremblingly drank, evidently to show that he did not have hydrophobia.

Dr. Watson directed him immediately to be put into bed, well covered with blankets, mustard to be applied to the epigastrium, bottles of hot water to be placed around him, and the temperature of the room to be raised as soon as possible to 80° Fahr.

Dr. Watson learned from the family the following history. On or about November 25 last, Mr. McC. was presented with a young Newfoundland dog, which appeared at the time to be in a healthy condition; it was playful and good natured, ate and slept well; but within a month exhibited signs of illness, becoming restless, frequently starting up from apparent sleep, growling, barking, and snapping at imaginary objects. Soon after these symptoms were observed, the dog bit the servant girl, both of Mr. McC.'s children, and a young nephew. Mrs. McC., being now terribly alarmed, informed her husband that the dog was sick, and insisted that it should be sent away. The husband proceeded to examine the dog; and, while thus engaged, was bitten through the index finger of the right hand near the root of the nail. The examination being satisfactory, the dog was drowned. The wound readily healed. These events occurred about December 20 last. The servant girl (previously mentioned as the first one bitten by the dog) died February 1, 1876, of unmistakable rabies.

Mr. McC. had been complaining for a week or ten days prior to this visit. He had been low-spirited, melancholy, nervous, irritable; had taken little food, complained of shooting pains through various regions of the body, and other abnormal sensations which he was unable to describe fully. On February 5, he went to the Jersey City Opera House at the solicitation of his brother, who thought the entertainment given there might possibly dispel the melancholy, and relieve the nervous agitation with which he was suffering. Having remained there a short time, he informed his brother that he was too ill to stay any longer, and then went home. The patient attributed all these symptoms to a cold. On February 6, he arose at the usual time, took more breakfast than at any time during the previous week, but, feeling unwell, he lay down and soon fell asleep. After sleeping two or three hours he suddenly awoke, and calling his family, a messenger was immediately sent for Dr. Watson. Having obtained the foregoing history, Dr. Watson ordered one-twelfth of a grain of strychnia every three hours, and directly sent a messenger for Professor Flint, of New York, with whom a consultation was held at 4 P.M. At this time the pulse was 76;

respirations 11; inspirations sighing. He did not complain of any 'sensation of tightness or squeezing' over the præcordial region, or of pain in the hand or arm, which had been present three hours before. It was determined to continue the treatment with strychnia for the present. At 7 P.M. one ounce of Rochelle salt was ordered.

February 7, 9 A.M., pulse 78; respirations 12; inspirations slightly less sighing than yesterday. Bowels moved twice during the night. Face less livid. Less congestion of the conjunctivæ. He had some sleep during the night; he complained of being thirsty. He had taken considerable food at Dr. Watson's solicitation. His condition remained about the same throughout the day.

February 8, 9 A.M., pulse 84; respirations 11; inspirations still sighing. He had little sleep during the night, but had taken an abundance of nourishment. A sensation of tightness and squeezing over the præcordial region returned during the night, but was not constant. Poultices were applied over the thorax. He was now perspiring freely. At 12, noon, he was suffering with ærophobia; a slight current of air caused shuddering, the countenance at the same time expressing intense anxiety, mingled with dread. He had just suffered severely with a paroxysm caused by a current of air from the door which opened from his room. There was much muscular twitching, which extended over the whole body. The patient's thirst was very much increased, and he was more apprehensive. He was no longer satisfied with the presence of half a dozen friends in the room, but wished the room crowded. He was unusually talkative. At 5 P.M. a dose of Rochelle salt was ordered. At 10 P.M. ærophobia was slightly increased.

February 9, 9 A.M., the bowels were moved freely during the night. A paroxysm came on at 1 A.M., and lasted until nearly 2 A.M. This paroxysm was apparently excited by finding himself in the room with no other attendant than his wife. He seemed greatly frightened when he awoke, looked wildly around the room, and called in frenzied tones for his brother and other attendants who had been with him until near midnight. The strychnia was omitted from midnight until 11 o'clock this morning, without the knowledge of the attending physicians. The patient imagined the medicine was injuring him. At 2 P.M. he took one-twelfth of a grain of strychnia, and at 5 P.M. the same quantity. He now asked Dr. Watson if he would allow him to drink water; and an attendant asked him if he would have some. He refused, although he was complaining of great thirst. One of the principal attendants informed Dr. Watson that the patient had not taken a drop of cold water during the preceding twenty-four hours, and could not be persuaded to make the attempt, but that he had taken warm drinks freely. 10 P.M. no change.

February 10, 9 A.M., pulse 80; respirations 17. He passed a very restless night, with very little sleep; he did not take nourishment well. He had one paroxysm during the morning. 1 P.M., pulse 100; respirations 15. He had considerable muscular twitching; nervous, and more apprehensive. At 5 P.M. he had another paroxysm. Pulse 120, and all other symptoms proportionally intensified. At 7 P.M. he had just recovered from another paroxysm; gaseous eructations were now very distressing. He had just vomited. At 10 P.M. pulse more rapid; he was more nervous and apprehen-

sive; there were more muscular twitchings, and he was greatly distressed with gaseous eructations. At 11.30 P.M., he had a paroxysm, which was described by Dr. McLoughlin as follows. 'The paroxysm consisted of clonic spasms of the respiratory muscles, each lasting one or two minutes, followed in quick succession by others, and each succeeding one increasing in duration and severity, without any complete intermissions. At the end of an hour the spasms had become so severe and the dyspnoea so great, that he could not speak above a low whisper, and even this whispering was of short duration; from the commencement of the paroxysm the voice had become gradually lower and lower, so that finally he made his wishes known to his attendants by beckonings. During and after the paroxysm he was extremely sensitive to changes of temperature, the slightest current of air causing the paroxysm to recur. At his desire the temperature of the room was kept at 82° Fahr. During the paroxysm he was constantly calling and beckoning for poultices, which were applied at the highest temperature consistent with the feelings of the patient, as only a slight increase of temperature was needed to produce a blister. He afterwards told us that he thought the hot poultices afforded him some slight relief. The face and manners of the patient during the paroxysm indicated the highest degree of anxiety and alarm, but he was apparently conscious, and at that moment seemed to keenly appreciate the peril of his situation. When able to speak, he called on me in anxious tones for help; begged me to do something to relieve him. At 1 o'clock the paroxysm began to remit, and had wholly ceased at half past one. He was frequently expectorating tenacious saliva. Respirations were gasping and irregular. The severity of this paroxysm satisfied me at the time that he could not possibly survive four more of equal severity.'

The patient had been unusually talkative during his entire illness, but, as soon as he had recovered sufficiently from the exhaustion produced by the last paroxysms he talked incessantly, appeared unable to stop, and would not allow others to speak or in any way to interrupt him. He had made up his mind to die, and seemed resigned to his fate; but when Dr. Watson entered the room in company with Dr. McLoughlin for the purpose of injecting woorara, he requested them to wait, and then proceeded to say adieu to his numerous friends assembled around his bed, some of whom he admonished of future danger, and at the same time urged them to a higher and better life.

February 11. 2 A.M. One-sixteenth of a grain of woorara which he injected subcutaneously. During the previous twenty-four hours he had slept very little; twenty minutes after the injection he fell asleep, the sleep being disturbed and restless, occasionally starting up and then falling asleep again. At 5 A.M. being in an adjacent room, Dr. Watson heard the patient wrangling with his friends, having already thrown off the poultices and bedding, in opposition to their remonstrances and even resistance. When he entered the room he immediately recognised him; asked where he was and what was the matter with him. Dr. Watson informed him that he was at home and that he was very ill. He replied 'This is very strange! very strange! I can't understand it,' and then asked 'how long have I been sick?' and immediately following the question with the declaration 'I am no longer sick; I have only a sore throat.' He was now con-

stantly putting his hand to his throat, hawking and making a great effort to clear the same, but apparently with little success. He was persuaded to lie down in bed, and to permit the bedding to be again placed over him; and within a few minutes he was able to recall the past, and soon became perfectly rational. This delirium was of short duration, did not continue more than half an hour, and was the only attack of the kind from the commencement to the termination of the disease, and had been preceded immediately by retching and vomiting. Dr. Watson now injected one-ninth of a grain of woorara, after which he slept better and exhibited less nervousness. At 8 A.M. he injected one-sixth of a grain of woorara, which was followed by a quiet sleep. At 10 A.M. the patient was quiet and rational; pulse 96; respirations 17; no sighing. He declared that he was feeling perfectly well; was wholly indifferent to currents of air, in fact, all unfavourable symptoms had disappeared. Thinking it better to continue the use of the woorara, Dr. Watson requested Dr. McLoughlin to inject one-sixth of a grain at 11 o'clock. The patient refused the injection, but took a bottle of citrate of magnesia without the advice of his medical attendants. He had no return of the symptoms of the disease.

Dr. Watson reviews so much of the daily reports as may seem necessary to establish the true nature of the disease. The chill from which the patient was suffering when Dr. Watson first saw him, had disappeared previous to his second visit, and did not again appear. The retching and vomiting present on the first day returned on the third and fourth days, and became so troublesome on the fifth day that the patient was unable to take any appreciable quantity of food, and less than half the quantity of brandy which he had taken during either of the two preceding days.

He also complained very much of the strychnia; said 'it nauseated him,' and owing to this condition only a small quantity was taken, and a still smaller quantity remained in his stomach, probably less than one-fourth of a grain during the entire day was retained, as he vomited occasionally immediately after taking this medicine. There was a gradual increase in the severity of these symptoms during the whole disease, and no cessation until after the woorara was administered. Congestion of the conjunctivæ and the turgescence of the vessels of the face steadily diminished, and had entirely disappeared on the morning of the fourth day. The contractions of the respiratory muscles were paroxysmal in character, confined entirely to this group, at least affecting only the larynx, trachea, and lungs. Dilatation of the pupils existed three days. Nervous excitability, apprehensiveness, dread of being left alone, and sighing respiration, were present during the entire disease; although varying in intensity, apparently much increased by the clonic spasms of the muscles; but these all disappeared with the use of the woorara. The respirations varied greatly; at times being remarkably slow, but gradually increasing in rapidity towards the termination of the disease. The sharp lancinating pain in the left hand and arm was of short duration, probably lasting two or three hours. The pulse was variable; always more rapid during and immediately after the spasm, and more irregular and feeble.

The aerophobia made its appearance on the third day of the illness, and increased uniformly until the injection of woorara put an end to all further trouble.

The patient was not apparently affected by bright light, the light of any shining object, or by bathing the hands and face in water. The *aërophobia* alone indicated the excessive *hyperæsthesia*.

He complained slightly of thirst on the second day, which gradually increased until the morning of the sixth day, and on the fifth day gave him much suffering. Soon after the beginning of the thirst he endured very much pain from a sensation of fullness, and great distress in the *præcordial* region, which were accompanied with gaseous eructations. The last-mentioned symptoms followed the same course as the third—especially the gaseous eructations, which became extremely troublesome on the fifth day.

Early in the disease he began to perspire freely; day after day it increased, until finally the bed and bedding were thoroughly saturated with the perspiration, thus giving the patient the benefit of a continuous hot bath; but here again the cessation came when the *woorara* was injected.

The only aversion to fluids was manifested by the patient refusing to take cold water on the third day of his illness, and persistently thereafter until his recovery was established; although constantly complaining of thirst during this period, he only drank warm fluids in considerable quantities.

The patient endeavoured to convince himself and friends during his illness that he was not suffering with rabies; especially was this the case when free from pain and distress, and a few hours free from a paroxysm, but on the fifth day, the paroxysms being frequent, the suffering severe and continuous, his countenance became greatly dejected, and he now apparently abandoned the only hope that had previously cheered him.

He had previously imagined that all his illness was caused by the medicines, and consequently blamed his medical attendants; but during this day his confidence in them seemed to be fully restored, and he begged them frequently for relief, and desired them constantly at his bedside. The most singular part of his conduct is, that so soon as he found himself completely relieved, and again placed on the highway to health, his old fancy returned, and he now pretends to believe that the only cause of his suffering was due entirely to the medicine.

In further commenting on this case, Dr. Watson makes the following remarks. The important question to determine in connection with this case now is entirely one of diagnosis. Do the facts and symptoms warrant the conclusion that this patient suffered with genuine rabies *canina*? This question raises another, which has a prior claim on us at this time. How is the diagnosis of rabies made? Is there any pathognomonic symptom of this disease? The last question must certainly be answered in the negative, although the vulgar belief is that the inability to drink water, or at least great aversion to it, constitutes the principal phenomenon, and even among physicians it is not unusual to speak of this symptom as the characteristic one of the disease.

Inability to drink water is, however, found to exist in many other diseases, particularly hysteria, spurious hydrophobia, and many morbid conditions of the throat (*vide* Elliotson, S. Cooper, Poland, Romberg, etc.). On the other hand, there are a few well-authenticated cases, terminating fatally without the presence of this symptom. The case of Robert Hodson, who was bitten by a rabid dog, which died soon after inflicting the wound, is reported by

Samuel Cock, who says: 'He had no dread of liquids, nor did he ever refuse drinking what was offered to him, when he was sensible enough to understand what was meant by the offer. . . . He was now put into a tub of warm water, up to the chin, which did not the least discompose him, and when he got to bed again, he said he had no pain anywhere.'

Mr. Holmes Coote says, that 'in the course of thirty-five years' observation at St. Bartholomew's, . . . he 'saw only two cases of hydrophobia; and one of these so far belied the vulgar pathology as to the patient's repugnance to water, that the sucking of ice gave him the greatest relief.'

Another symptom of rabies—the clonic spasm—demands attention. The authorities who have written on the subject of rabies, do not fully agree in regard to the muscles principally affected by the spasms in this disease; probably for the reason that it seldom happens that the same group are equally affected in different cases, although there are very few, if any, cases in which the muscles of respiration are not largely involved.

As regards the diagnosis and treatment, Dr. Watson says: 'I have carefully examined the symptoms of this case, but have failed to produce anything like a satisfactory image of tetanus, hysteria, pseudo-hydrophobia or phrenitis. Had the case terminated fatally, probably no physician could have been found who would have questioned the correctness of the diagnosis rabies *canina*; but, notwithstanding the fact that the patient is now alive, I am still firmly convinced that the diagnosis was correct.

'In reviewing the development of this case, which has terminated thus favourably, so unexpectedly to myself and the medical gentlemen who have seen the case with me, I shall detail the management from the beginning to the end of the disease, and also mention some of the reasons for the selection of the remedies used. The strychnia was intended to be used regularly in the prescribed doses throughout the entire day, except while the patient was sleeping. I am, however, satisfied that it was not at all times taken with perfect regularity. The entire quantity of this drug used during the five days' illness of the patient was about two and one-fourth grains. It was our intention, when we commenced the use of the strychnia, to continue it in gradually increasing doses until its specific action was produced; but the patient did not take the medicine with that degree of method which insures confidence, and enables a physician to push the use of such powerful remedies until the desired effect has been attained. I am now satisfied that the plan of administration adopted by Dr. Fell in the treatment of tetanus with strychnia is highly advantageous, and should be followed in all cases of hydrophobia where this drug is used.

'The selection of this remedy for this case was based on the following reasons. 1. Rabies and tetanus belong to the same class of diseases, and the medicines used advantageously in the latter ought, therefore, to be beneficial in the former. 2. If we can rely on the published reports of cases of tetanus cured with it, then we are fully assured that no remedy has ever been previously used with anything like the same success. Finally, the treatment of rabies with the remedies heretofore used has not been sufficiently successful to justify a very strict adherence to any particular drug or method.

'The injections of *woorara* were given by myself, and I am, therefore, able to speak positively in the

daily report. The specimen was procured through the kind assistance of Professor Austin Flint, and was in a solid state. I requested Mr. Phillips, of this city, to prepare it for use, and have received from him the following note. "The solution of woorara for hypodermic injection was prepared as follows. One grain of woorara was first reduced to a fine powder, and to it was added with constant stirring one fluid drachm of distilled water. Alcohol of 95 per cent. was now added, drop by drop, till a nearly perfect solution was obtained. Sufficient diluted alcohol of the U. S. P. was then added to make the solution measure two fluid drachms. Prepared in this way, twelve minims of the solution should represent one-tenth of a grain of the drug. The slight turbidity of the preparation was probably owing to extraneous matter which existed as an impurity."

"The woorara was finally used because of its well-known physiological action, and also for the reason that the strychnia, which at first seemed to be highly beneficial to the patient—and I am fully satisfied that it did delay the progress which the disease would otherwise have made—could no longer be given on account of the vomiting."

"The conviction that I have just expressed in regard to the action of the strychnia is based on the fact that the patient after each paroxysm suffered with nervous twitchings, and at the same time the pulse was observed to be much more frequent and feeble than before the spasm. In this condition, it was invariably the case that, if the strychnia were taken immediately after the spasm, the twitchings rapidly disappeared, and the rapid pulse became slower and fuller; but when the remedy was omitted the nervous and depressed condition continued much longer. Beside the medicines already mentioned, the patient drank freely, during his entire illness, of a decoction of *Scutellaria lateriflora*.

"He commenced the use of brandy punch on the second day of the disease; and on the third and fourth days, used each day one quart without showing any symptoms of intoxication, but during the fifth day he could not be prevailed on to take even one-half this quantity. During the first part of the illness he ate and slept well; but during the latter part he took less food and had much less sleep."

"The profuse diaphoresis, which has been previously mentioned, I think may have had a beneficial effect, and I find on examination an article written forty-six years ago, entitled "Proposal to employ Heated Air in Hydrophobia," in which appears the following recommendation.

"It is my wish to propose, through you, to the public, that future cases of this disease may be submitted to the full influence of highly heated air, so as to produce from the skin and lungs a copious exhalation. This treatment affords to my mind a hope of success, because in all the more virulent and manifestly contagious diseases, as plague, small-pox, measles, and scarlatina, there is an effort to throw off the poison by cuticular action; and, in the plague, those who get bubo and cuticular disease early do for the most part recover, and in some instances *spontaneous sweating has appeared to carry off the disease*."

"I will only say, in concluding the report of this case, that I am now fully satisfied that the diagnosis of the disease made during the illness of the patient is correct, even without the aid of a *post mortem* examination; and were I to assume the responsibility

of managing a case of rabies to-day, I should not materially change the treatment from that followed in this case."

In a letter to Dr. Watson, Dr. Flint says:

"The symptoms at, and prior to, my visit, are consistent with the supposition that the patient was in the primary stage of rabies; and, as it seems to me, we were fully justified in having the opinion which we both held at that time. Under the same circumstances I should again form the same opinion. The subsequent history shows the absence of the symptom which is generally a marked feature, and from which the term hydrophobia derives its significance, namely, laryngeal spasm excited by the effort to drink water, and consequent apprehension in making this effort. But I suppose it to be undoubtedly true that this symptom is not invariably present in cases of rabies. While, therefore, hydrophobic manifestations would have been valuable in a diagnostic point of view, their absence is not proof that the disease was not rabies."

"Lyssaphobia may certainly be excluded. The patient appeared to be resolute in the belief that he had no serious affection. There is no ground to suppose that the phenomena were hysterical."

"The character of the convulsive paroxysms is of great importance with reference to the diagnosis. The point of inquiry here is, were these paroxysms due to the strychnia? From your description they were not of the character which strychnia would produce, and the doses of strychnia were not sufficient to produce convulsive movements with disturbance of respiration."

"The fact of recovery naturally excites scepticism in respect of the diagnosis of rabies. I am conscious of this in my own mind. Excluding, however, lyssaphobia, hysteria, and the toxic effects of strychnia, it is difficult to say what the disease was, if it were not rabies. To say the least the supposition that the disease was due to the virus of rabies is not without the range of probability; and the case would, therefore, lead to the employment of the woorara in cases which admit of no doubt as to the diagnosis. Whether the disease was or was not rabies, the effect of the woorara appeared to be useful; and as a contribution to our at present limited knowledge of the therapeutical use of this remedy, the report of your case is interesting and valuable. It is hardly necessary to add, that should the woorara be found to have a curative power in rabies, you will have conferred a great benefit on medicine and on humanity by venturing upon its use, and by the publication of your report."

MATHIEU AND URBAIN ON THE COAGULATION OF THE BLOOD AND OF THE PRINCIPAL ALBUMINOID SUBSTANCES.*

The coagulation of fibrine, myosine, albumine, and caseine are studied separately by MM. E. Mathieu and V. Urbain. Their principal conclusions are as follows.

The fibrine of the blood is in the plasma in a state of solution. It is converted into an insoluble product by being chemically precipitated. This is a result of the combination of the fibrine with carbonic acid, but in order that the acid gas should exercise its coagulating action on the fibrine it is necessary

that it be free. In physiological conditions it is fixed to the hæmoglobine of the red blood-corpuscles, whose function it is to carry oxygen to the tissues and to bring back carbonic acid. If injury or disease produce excess of carbonic acid, or set free that which is normally combined with the blood-corpuscles, coagulation takes place.

After having established by a series of analyses that the proportion of carbonic acid of the blood decreases during the formation of the clot and that coagulation is independent of oxygen, the authors endeavour to prove that the coagulation of the blood is produced by the presence of the acid gas, by showing that blood which has been deprived of carbonic acid becomes incoagulable, and on the other hand that blood thus modified becomes again coagulable, if the carbonic acid which it has lost be given back to it.

There are three conditions in which the acid is set free in the plasma.

1. *Coagulation by Displacement.*—It is by gaseous displacement that blood removed from the vessels and exposed to the air coagulates. In this case the hæmoglobine absorbs oxygen, which gradually displaces the carbonic acid that is combined with the red corpuscles and sets it free. The acid gas then spreads itself through the plasma, and transforms the fibrine in solution into insoluble fibrine. The coagulation takes place at the exact time when the quantity of carbonic acid introduced into the plasma becomes too considerable to be fixed as bicarbonate. This gaseous displacement is analogous to that which takes place during respiration, with the sole difference that during respiration the displaced gas traverses an animal membrane and is eliminated, whilst in the other case it accumulates in the plasma, until it combines with the dissolved fibrine.

2. *Coagulation by Saturation.*—When the elimination of the carbonic acid fixed to the blood-corpuscles cannot take place normally, there comes a time when, their affinity being satisfied, the excess of gas produced *in situ* becomes free in the plasma and consequently is in a condition to exert its action on the fibrine. The formation of clots in pulmonary apoplexy is thus explained. Such also is the mechanism of the coagulation of the blood which follows the ligature of a vessel, and in consequence of inflammation or extreme stagnation of the blood-current.

3. *Coagulation by Change in the Blood-Corpuscles.* This mode of coagulation is the result of a functional diminution of the number of corpuscles, and of an imperfect elimination of the acid gas secreted by the organism. The altered red corpuscles can no longer fulfil their function, the carbonic acid in excess becomes free in the plasma and a clot forms. The coagulations which take place in cutaneous asphyxia and in the course of different cachexies, are the consequence of anatomical and functional changes and numerical diminution of the red corpuscles, and belong to this third class.

Myosine is believed by physiologists to be a simple variety of fibrine, and the experiments of MM. Mathieu and Urbain show that the mechanism of the coagulation of those two substances is perfectly analogous. Muscular rigidity is the result of coagulation of myosine; it is preceded by slow oxydation of the tissues which produce carbonic acid. During life, the carbonic acid produced by the organic oxydations is unceasingly carried off by the blood-corpuscles and eliminated by respiration and

the secretions. But after death, this elimination no longer taking place, the carbonic acid accumulates in the tissues, and provokes coagulation of the myosine and in consequence muscular rigidity, which can take place either in acid or alkaline tissues, for the acidity due to lactic acid and muscular coagulation are only a simple coincidence without the relation of cause and effect.

The general result of their researches is thus summed up. 'The transformation of a soluble substance into an insoluble compound is produced by the intervention of an acid, usually masked by the alkalinity of the fluid. This acid, indispensable to the formation of a clot, pre-exists neither in milk, nor in muscle, nor even in the normal fluids of the organism, the blood excepted. On the contrary, the acid which coagulates fibrine and albuminous fluids properly so called, pre-exists in the blood, the white of egg and the fluids of the normal or pathological secretions of the economy.'

G. THIN, M.D.

ANATOMY AND PHYSIOLOGY.

KÜHNE AND GRUTZNER ON ORGANISED AND SO-CALLED AMORPHOUS FERMENTS AND ON TRYPSIN (EUZYM OF THE PANCREAS).—W. Kühne (*Verhandlungen der Naturhistorische Verein zu Heidelberg*, Neue Folge, Band i. p. 194, and *Centralblatt für die Medicinischen Wissenschaften*, no. 36) proposes to call the amorphous ferment euzym, the ferment of the pancreas, trypsin. Its action is not arrested by salicylic acid, and this substance is very applicable for demonstrating the specific digestive actions of the pancreas from other actions, such as putrefaction, which may occur simultaneously. Eight hundred grammes of pancreas of ox treated with four grammes of salicylic acid and two litres of water at 40° Cent. (102° Fahr.) showed no bacteria, no smell of indol, whilst the glands were dissolved after several hours. Filtered portions digested powerfully. Sulphuric acid and hydrochloric acid in equal quantity did not produce the same effect, but acetic acid did so in a striking manner. Salicylic acid does not affect the action of pepsin, but rather protects its solutions from putrefaction. Pepsin destroys the action of trypsin, but the pancreas ferment does not affect pepsin, but this latter is rendered inactive by an alkaline reaction. The explanation offered by Kühne of the increased appetite of dogs with biliary fistula is, that normally the pepsin is destroyed by the bile. If the bile be not poured out, the pepsin, still active, passes into the duodenum, and disturbs the pancreatic digestion.

According to Heidenhain, the pancreas contains only zymogen. If, however, according to Kühne, a pancreas quite fresh and still warm be rubbed up with absolute alcohol, and from the gland so treated, a watery extract be prepared at 0° C. (32° Fahr.), this extract is at once active. Heidenhain's zymogen is therefore a body capable of being split up by alcohol. If the extract of the gland be repeatedly precipitated by alcohol and dissolved in water, and if to the watery solution acetic acid be added to 1 per cent., then an albuminous body is precipitated, which the author terms leukoid, whilst the filtrate again precipitated by alcohol yields a precipitate essentially consisting of trypsin. Trypsin is amorphous, transparent, of a feeble straw-yellow colour, easily soluble

in water. The solution, even when rendered alkaline, can be kept unchanged, no formation of peptones, leucin, or tyrosin taking place. On being boiled, it is decomposed into coagulable albumen and peptone. In watery solution trypsin dissolves fibrin when warmed almost at once; the solution contains peptone, antipeptone, leucin, and tyrosin. The process is this: first peptone is formed, which is not to be distinguished from that formed in the stomach, and that this now produces antipeptone and the other substances, which are chiefly products of decomposition and crystalline.

Trypsin has no action on starch and dextrin; putrid albumen and bacteria contain no trypsin, and, in fact, no ferment which resists the action of alcohol. No trypsin is to be found in arterial blood, the salivary glands, and lymph gland of the mesentery.

P. Grutznar (*Pflüger's Archiv*, Band xii. p. 285), has also made some observations on the amorphous ferments.

1. The salivary glands of the dog, according to this author, do not form any sugar-ferment. It is true that, with long digestion of the mixed saliva or the glycerine extract of the glands with starch-mucilage, a saccharine reaction is obtained; such traces of a diastatic ferment, however, are found in all parts of the body. The salivary glands of man and of the vegetable feeders undoubtedly contain a diastatic ferment; in the rabbit the parotid is much richer in ferment than the submaxillary gland.

2. The use of Brunner's glands in the wall of the intestine has long been doubtful. The author finds that their gland-cells are microscopically not to be distinguished from those of the pyloric glands; in fact, by extracting them with glycerine or hydrochloride of 1 per cent., an extract containing pepsin may be obtained, which is richer in pepsin when the cells are large and clear than when they appear turbid. Whether the ferment secreted by these glands is active during life is, from the alkaline reaction in the intestine, doubtful. No diastatic ferment was to be detected in Brunner's glands.

3. The amount of the diastatic ferment in the pancreas varies with the time which has elapsed since the last meal. It is least six hours after food, and greatest fourteen hours thereafter. The quantity of the ferment was estimated by the action of the glycerine extract (10 grammes fresh pancreas and 100 grammes glycerine) on starch-mucilage, analogous to the method of Grünhagen for estimating the amount of pepsin. The starch-mucilage was placed in a filter, and was treated with an equal amount of the glycerine extract (0.3 gramme); the quantity of the filtrate produced in a given time gave the measure of the activity of the extract. The first filtrates produced by the action of the diastatic ferment were rich in erythro-dextrin (Brücke), poor in sugar, whilst the later contained much more sugar. Further experiments led to the general result, that the products vary according to the intensity of the action of the ferment. The smaller the amount of ferment and the shorter its action, the greater the prevalence of the dextrin; in the opposite case, the sugar. The same is true for pepsin. With a small amount of the ferment, short time of action, etc., syntonine is the chief product formed; in other cases, peptone. The addition of 0.5 to 1 per cent. of carbonate of soda arrests the action of pepsin. In both cases, the intermediate products dextrin and syntonine (parapepton) are chiefly formed. These observations, together with

many others, prove that the amorphous ferments are destroyed during their action. The pancreas-ferment which acts upon the fats presented great difficulties in its investigation. It is very unstable in its nature. The glycerine extracts of the pancreas gradually become acid, and as soon as this takes place the fat decomposing action ceases. Later, the author employed a feebly alkaline glycerine. The glands were poorest in fat ferment six hours after an ample meal, and the quantity rose till the fortieth hour. The fat-ferment is only active in an alkaline or neutral solution. Even the salivary glands yield far more active extracts when they have been exposed for some time to the air, than when they are prepared quite fresh. Similar observations have been made by Liversidge and Heidenhain for the pancreas; by Von Wittich, Ebstein and Müller for the liver; and by Hammarsten for the ferment of the stomach.

MAYER AND FRIEDRICH ON THE PHYSIOLOGICAL ACTION OF NITRITE OF AMYL.—S. Mayer and J. Friedrich (*Arch. für exper. Path.*, Band v. p. 55, and *Centralblatt für die Medicin. Wissenschaften*, no. 38), in order to avoid the disturbing effects produced by inhaling this drug through the nose, invariably administered it through a tracheal cannula; and according to the duration of inhalation of the vapour, they distinguished a weak (4–60 sec.) or a strong dose (over a minute). These observers, like Filehne, always observed a considerable increase in the frequency of the pulse produced by the amyl-nitrite. In the explanation of this phenomenon they also agree with Filehne, in ascribing it to a diminution of the tonus of the vagus-centre, and adduce several new facts in support thereof. In dogs, which have received amyl-nitrite, the difference in the number of beats during inspiration and expiration disappears; further, if in curarised animals, when by stopping the artificial respiration, the number of heart-beats has been reduced in consequence of stimulation of the vagus-centre by the dyspnoic blood, a small quantity of amyl-nitrite be injected into the jugular vein, the frequency of the heart-beats increases just as if the vagi were divided. Large doses of amyl-nitrite paralyse the heart itself.

Regarding the fall in blood-pressure produced by amyl-nitrite, the authors have succeeded in affording a new proof of the view of Lauder Brunton, that this drug acts directly on the walls of the vessels. After the method of Kussmaul and Tenner, by cutting off the supply of blood to the brain and medulla oblongata, they rendered these organs inactive, so that all phenomena depending upon these centres ceased. If amyl-nitrite were now inspired, the blood-pressure fell considerably.

After moderate doses the respiration became more frequent and deeper; after strong doses, flat and very slow. In this case, it is due to a direct action on the respiratory centre. That the change in the blood-circulation does not produce the dyspnoic respiration, is proved by an experiment with diminution of the blood-pressure by stimulating the nervi depressores. In this case acceleration of the respiration only occurs here and there, although the diminution of the blood-pressure is greater than that produced by the amyl-nitrite.

The spasms produced by this drug are not caused by the changes in the circulation, but are due to a direct stimulation of the brain. The spinal cord does not appear to be influenced thereby.

After inspiring the vapour for a considerable time,

the animals pass into a condition where the blood-pressure falls very low, the heart-beats and the respiratory movements are slow but regular, and the peripheral nerves and the muscles remain excitable. As this stage lasts for a long time (one hour), it may probably be of value for some experiments.

SCHWALBE ON THE NUCLEI OF GANGLIONIC CELLS.—Professor G. Schwalbe (*Festschrift für Naturw.* Band x.), remarks that, if a perfectly fresh and completely transparent retina of a sheep be spread out in aqueous humour, with its inner surface upwards, on an object-glass, it is easy to detect, in the parts lying next the ora serrata, the ganglionic cells sharply defined, as here the nerve-fibres are reduced to sparsely scattered bundles. Round bright spots, just like fluid in a cavity, are to be observed in a dimly glancing homogeneous mass. On more exact observation, a round nucleus is to be detected within each bright spot, with all the characters of a nucleus of a ganglionic cell. The remaining part of the space is clear, with the exception of a small amount of a finely granular substance around the nucleus. On adding iodised serum, the whole transparent space becomes turbid and appears finely granular. As an argument against the supposition that the granular layer is nervous, the author cites the completely different optical properties of fresh ganglionic cells and fresh granular substance. The latter appears as if it were permeated by innumerable small vacuoles. The shining homogeneous substance between the ganglion-cells shows no trace of tissue-elements, and is obviously comparable to the cement-substance of epithelium. The nuclei of the ganglion-cells of the retina possess a membrane, whose inner surface is provided with fine projections. Sometimes they contain a toothed nucleolus provided with fine processes. In adult animals the difference in size in the ganglionic cells is comparatively trifling. In young animals (calf), however, it is extraordinarily great, and the same is true of the nuclei. The smallest nuclei are the youngest. They are without trace of nucleolus, and consist of a regularly distributed granular mass. No differentiation into nuclear membrane and contents is present. The substance, out of which the nuclear membrane and the nucleoli are ultimately formed, is at first regularly distributed through the whole nucleus and completely fills it, and is permeated by numerous small vacuoles filled with another mass. During the growth of the nucleus, the vacuole-substance increases without any essential increase of the other constituents of the nucleus being visible. The consequence of this is, that the latter is torn into several portions, of which one always encloses the surface of the nucleus, and becomes the so-called nuclear membrane, with a number of irregular projections; the nucleoli adjacent to the wall projecting into the interior of the nucleus, whilst other portions roll themselves together into one or more nucleoli. In proportion as the clear substance in the interior of the nucleus increases, the internal projections of the nuclear membrane in consequence of the extension of the latter, are caused more and more to disappear. The whole process may be regarded as one of vacuolation, similar to what occurs in plant-cells, in the separation of protoplasm from the cell-juice. In ganglion-cells in other localities (anterior horn of the spinal cord in the rabbit and pig, ganglion Gasserii of rabbit, spinal and sympathetic ganglia of frog) the nuclear membrane is absent, and therewith the

nucleoli adherent to the wall (*i.e.* thickenings on the interior of the membrane). The clear juice of the nucleus with vacuolated nucleolus adjoins the cell-substance directly.

These observations of Schwalbe contradict the results of Auerbach, that the nucleoli wander from the protoplasm of the cell into the nucleus. According to Schwalbe, these arise like the nuclear membrane from the original nuclear substance; in that the latter, by the accumulation and increase of the clear nuclear juice, is broken up into several pieces. Further, no increase of the nuclear substance takes place; this remains constant, and during increase of the nucleus diminishes relatively. Thus it arises that, in ganglion-cells, in opposition to the results of Auerbach for other cell-nuclei, one observes a plurinucleolar condition preceding the uninucleolar, and that the latter may pass into a non-nucleolar condition, in which the entire nucleolar substance is employed as nuclear membrane. The author arrives at the conclusion that Auerbach's results on the origin and increase of nucleoli are not to be generalised.

In the body of the spinal ganglion-cells of the frog, two substances are to be found; one of which forms a very delicate network, which reaches from the surface of the membraneless nucleus to the surface of the cell; whilst the other, the clearer, fills the meshes. The substance of the nucleolus is optically different from these two substances, whilst the nuclear juice appears to be identical with the mass filling the meshwork. There are therefore three substances to be distinguished in the ganglion cells—the nucleolar substance, the cell-juice, and the reticular substance. The view of Max Schultze's regarding the fibrillar condition of the nerve-cell, according to Schwalbe, depends upon an imperfect interpretation of the reticular substance. Lastly, the author remarks regarding the difference in structure in nerve-cells of different localities.

LEWIS ON A NEW METHOD OF STAINING THE FRESH BRAIN.—In the September issue of the *Monthly Microscopical Journal*, Dr. Bevan Lewis, Pathologist to the West Riding Asylum, publishes a paper on the preparation and staining of fresh brain for microscopic examination.

After commenting on the importance of examining brain at the earliest possible opportunity for the determination of pathological states, Dr. Lewis goes on to speak of the relative value of the older methods of hardening by chromic acid and its salts, and the fresh method which he recommends, indicating at the same time the necessity of employing both under certain conditions. After referring to the plan adopted by Dr. Batty Tuke, and more recently by Mr. Sankey, the writer describes his method as embraced in three stages—namely, first, preparatory; secondly, staining and differentiation; and thirdly, permanent mounting of the preparation.

In the first stage, a fine vertical section of the cortex is transferred to a slide bathed in Müller's fluid, a glass cover placed over it, and gentle steady pressure exerted until an almost transparent film is obtained. The slide is transferred to methylated spirit for twenty to thirty seconds, by which time the cover can be readily removed; the superfluous spirit is then removed. The object of these measures is the production of a film of uniform thickness, and little or no friability.

In the second stage, the film is treated with

aniline black, the staining being favoured by immersion in water.

In the description of the third stage, the various modes of drying this film are considered, preference being given to drying spontaneously under a bell-glass enclosing a little concentrated sulphuric acid to hasten the progress. When perfectly dry, a few drops of chloroform are placed on the film; and before evaporation, permanent mounting is carried on with a chloroform or benzole solution of balsam. The rationale of this process is then dealt with; the term crushing, as applied to it, is objected to, as the elastic nature of the neuroglia probably suffices to explain the great immunity of the cells and processes from any injury, tearing, or distortion, thus rendering the method equivalent to the most delicate teasing. Accompanying the paper are two plates showing sections from the ascending frontal convolution of the human brain, magnified 50 and 210 diameters respectively, which exhibit the larger and smaller pyramidal cells, and other details of the cortex. A brief reference is next made to a very valuable modification of the old process of hardening and section-cutting, whereby the cells are exposed, in their most recent and active state, to the action of the staining simultaneously with the hardening reagents.

WM. STIRLING, D.Sc., M.D.

FOSTER AND DEW-SMITH ON THE EFFECTS OF THE CONSTANT CURRENT ON THE HEART.—Dr. M. Foster and Mr. A. G. Dew-Smith (*Journal of Anatomy and Physiology*, vol. x. part 4), give the result of investigations on the effects of the constant current on the heart. The animals used were chiefly frogs and toads, but also a few tortoises and dog-fishes. The current was applied by means of non-polarisable electrodes, and tracings of the heart's beats were obtained by using a light lever.

When a weak current was passed from apex to base of the lower two-thirds of the ventricle, or *vice versa*, either 1, no effect was produced, or 2, a beat was obtained at the making or breaking of the current, or at both, but during its passage there was perfect quiescence. Generally the making beat proceeded from the cathode towards the anode, and the breaking beat from the anode towards the cathode. Thus far, the cardiac tissue was in keeping with Pflüger's well-known law. But stronger currents produced rhythmic pulsations on the making of the current, which continued during its passage—the previous quiescent period—and ceased when it was broken. These rhythmic pulsations increased in number as the current increased in intensity; but however strong the current, it was impossible to develop a complete tetanic condition, such as occurs in ordinary striated muscle.

Such rhythmic pulsations had been already noticed by Eckhard, and were considered as a particular instance of the tetanus seen in an ordinary muscle-nerve, to which the constant current had been applied. Dr. Foster and Mr. Dew-Smith believe, however, that the rhythmic pulsation obtained is entirely different from such a tetanic condition, and, on the supposition that ganglionic cells are absent from the part of the ventricle they used—the lower two thirds—hold that such pulsations can only be explained on the hypothesis that the cardiac muscle has not entirely lost that power of rhythmic contraction resident in primitive protoplasm.

They next point out that, according to the size of the piece of ventricle employed, there was always

one special direction in which the current had to be thrown, in order to get the rhythmic pulsation most readily, *i.e.* according as one part or another was made cathodic. After giving an explanation of this, *viz.*, that it is most probably connected with the predominance of the catelectrotonic phase, they go on to consider the interesting point, that when by means of a current rhythmic pulsation is set up, the break beat is absent. They further consider the effect of the current on the whole ventricle when quiescent, or when beating spontaneously, and on the ventricles and auricles beating spontaneously and with the cavities distended with serum or not. The results obtained in these instances resembled the former, but were not so definite. One curious point was that, when the heart was *in situ*, and the circulation intact, even a strong current had little or no effect. The effects of a constant current on the heart brought to a standstill by Stannius' experiment, or by stimulation of the vagus, are lastly considered. In the latter case the constant current produced no evident effect, but when the current was passed and the vagus stimulated, inhibition took place apparently as usual.

From all these experiments, they conclude that all rhythmic pulsations are due to the action of the constant current on the muscular tissue of the heart; further, they believe that the vagus, when stimulated, acts like any other nerve on the muscular tissue of the heart itself. The ganglia, they therefore think, play an unimportant part in the production of the heart's spontaneous rhythmic pulsations; and they hold that the vagus, when stimulated, does not inhibit the heart's action through the ganglia, but by influencing directly the cardiac muscle.

J. C. EWART, M.B.

PATHOLOGY.

BURGL ON TRANSPOSITION OF VISCERA.—Nos. 24 and 25 of the (Munich) *Aerztliches Intelligenz-Blatt* for June 13 and 20, 1876, contain two papers by Dr. Georg Burgl, of Munich, on the subject of Ectopia or transposition of viscera, entitled 'Zur Casuistik des Situs Viscerum mutatus.' He commences with a bibliography, and then proceeds to detail four cases which have lately come under his own observation.

1. The first case is that of a woman dying in the Munich Hospital. The peculiarities named were discovered in the dissecting-room, whither the unclaimed body was taken. The heart was on the right side (dextro-cardia), and the abdominal viscera were transposed. The right ventricle of the heart was hypertrophied, and gave origin to the aorta, whilst the pulmonary artery took its origin from the left ventricle. The innominate artery was the first branch on the left side of the aortic arch, and divided into a left carotid, and subclavian. Both *venæ cavae* discharged their blood into the left auricle. The right lung had two, the left three lobes. The oesophagus lay on the right side. Left-sided hydrothorax, and compression of the lung, were found. The liver (which was nutmeg-like) was in the left hypochondrium. Its larger lobe occupied the left side, the lesser lay over the stomach, and pushed the spleen to the right. The spleen, indeed, was found in the right hypochondriac region. The stomach lay with its fundus to the right, and its greater curvature to the right and below. The duodenum lay on the left,

the ascending colon in the left iliac and lumbar region; the descending colon on the right side; the cæcum on the left; the rectum right. There is a photograph of this case in Rüdinger's 'Topographical and Surgical Anatomy.'

2. The description of the second case is by Professor Von Ziemssen, though the diagnosis was made before the patient was admitted to the hospital.

Magdalena Eilles, the daughter of a day-labourer of Haidhausen, aged twelve, was admitted to the hospital April 3, 1876. The cyanosis was not much noticed till she was six years of age. She was an intelligent child, but had suffered lately from oedema of the feet, symptoms of syncope, vertigo, and other signs of disordered circulation. She had had scarlatina and diphtheria. Her digestion was fairly good, and the bowels regular. There were two living of the same family, apparently with normal viscera—one brother and one sister. Three sisters were born dead. The father died six years ago of meningitis, and had been ill long before his death. It did not appear, however, that his heart was affected, or his viscera transposed. Her state on admission was extreme cyanosis, she had very clubbed fingers. Pulse 104; respirations 32. She was in height 55 inches, and weighed about 58 pounds. The heart was on the right side of the chest. Its apex-beat was in the right thorax, midway between the lines of the nipple and of the right axilla, about $1\frac{1}{2}$ inches outside the nipple line, in the fifth costal interspace. The cardiac dulness began at the third rib, and was 4 inches in the diagonal line by $3\frac{1}{4}$ at its base. There was a faint systolic murmur heard on the right of the sternum between the third and fourth ribs, and best at the third rib. There was no venous pulsation. The physical signs indicated the liver to be on the left, and the spleen on the right. The injection of an effervescing enema distended the ileo-cæcal region first, and the distension remained greatest here. The apex of the lung on the left side seemed to be a little lower than the right. The girl was undoubtedly right-handed. From a combination of physical signs and symptoms, the diagnosis was made as follows: Transposition of the thoracic viscera, also of the abdominal viscera; stenosis of the pulmonary artery, and permanent opening in the septum ventriculorum (*sic*).

3. Anton Wimpensinger, aged fifteen, a book-binder's apprentice, had always been healthy as a child. He was admitted to the hospital for difficulty of breathing felt for a few months only. He was rather diminutive. Respiration was somewhat stridulous.

The apex of the heart was felt and seen in the fourth and fifth intercostal spaces on the right side, best in the fourth. Cardiac dulness reached from the line of the right nipple to the right edge of the sternum, and above to the third rib. Over the pulmonary artery (on the right side of the sternum) a weak systolic bruit was heard, and a slapping second sound. The spleen was of apparently normal size on the right side. The liver was on the left. Somewhat large distension of the stomach with carbonic acid showed that its fundus was on the right, and the pylorus on the left. Distension of the rectum showed itself first in the right ileo-cæcal region, and revealed that the rectum, sigmoid flexure, and descending colon were on the right. As the parents were dead, their anatomy was unknown

The lad was decidedly right-handed. (This description also is by Professor Ziemssen.)

4. Peter Hundsrucker, aged twenty-seven, day-labourer, attended the Hospital on December 27, 1875, complaining of cough and dyspnoea. Until 1870 he was always healthy. Then he had dysentery at Nancy. He was invalided eight days at Bazeilles by a shot grazing his shin. In October, 1872, he had articular rheumatism, and suffered more or less for a year. In the autumn of 1872, he remarked blood in a vomit. This has happened once or twice since. The father died at sixty, of some unknown disease. The mother, aged seventy, and sisters were healthy. There was no cardiac dulness on the left. There was pulsation to be seen on the right side in the second, third, and fourth intercostal spaces. It could be easily felt in the fourth space. In the right parasternal line, and at the edge of the sternum on the right side, there was dulness beginning at the third rib and reaching almost to the right nipple. The (apparently normal) cardiac sounds were heard on the right side instead of the left. Physical examination of the thorax and abdomen led to the following diagnosis: Transposition of the thoracic viscera; the same of the abdominal organs; pleuritic effusion on the left side; phthisis, and syphilis. Although the pleural exudation seemed to render the case a little doubtful at the first moment, it was not so to those who watched it from day to day. The author expresses his thanks to Dr. von Ziemssen and Dr. von Buhl for their kind assistance in the examination, and reports of these cases, to the former for the last three, to the latter for the first case reported.

Bibliography.—The translator has selected the following from the original papers.

The first recorded case of transposition is said to have been in 1648, in a new born child in Brittany [Riolanus, 'Opuscula Anatomica, varia et nova.' Parisiis, 1652, pag. 133.] At p. 117 of the same work, another case, Morand and Mery [*Mémoires de l'Académie Royale des Sciences*, 1666-1699, tom. x. Paris, 1730] see also Bernard Schultze, Virchow's *Archiv*, Bd. xxii. p. 210. Geoffrey St. Hilaire's 'Histoire générale et particulière des Anomalies,' etc., tom. ii. Paris, 1836, contains fifty such cases.] Wenzel Gruber in Dubois-Reymond and Reichert's *Archiv*, 1865, reports seventy-nine such cases up to date.

The following works on the subject in the present century up to 1865, have been mostly collected by Wenzel Gruber:—Von Siebold, F. M. Heiland, 'Darstellung des Verhältnisses zwischen der rechten und linken Hälfte des menschlichen Körpers,' Nürnberg, 1807, p. 55. Sampson, *Philosoph. Transact.*, vol. ix. Béclard, *Bullet. de la Fac. de Méd.*, December 12, 1816. Rostak, *Nouveau Journal de Médecine*, May, 1818. Krupp, 1820, *Journal Général*. Scouteten, Forriep's 'Notizen aus dem Gebiete der Natur- und Heilkunde,' Bd. vi., Nr. 8. Wette, 'De situ viscerum inverso,' Diss. Berlin, 1827. Baer C. E. von, 'Ueber Entwicklungsgeschichte der Thiere,' Königsberg, 1828. Bujalsky, 'Beschreibung einer umgekehrten Lage des Herzens, etc., mit Mangel der Milz,' Petersburg, 1829. John Alexander, *Lond. Med. Gaz.*, November 22, 1834. Grisolles, *Bullet. de la soc. anatom.*, 1834. H. M. Leppington (*vide* Schmidt's *Jahrbücher*, 1835). Pétrequin, *Gaz. méd.*, April 1, 1837. Gery, *Archives Générales de Médecine*, 4 série, tome i., 1843. Bichat, 'Anatom. descript.,' 1846. Boss, *Bullet. de la soc. anat. de Paris*, 1846. Buehring, 'Die seitliche Rückgratsverkrümmung,' Berlin,

1851. Stolz, *Gaz. méd. de Strassbourg*, 1851. Vel-ing, *Gaz. méd. de Strassbourg*, 1854, v. i. Virchow (Würzburg, 1854, Ein von Virchow beobachteter Fall von einem Typhuskranken. Das Präparat befindet sich in der patholog. Sammlung zu Würzburg.) Luys, *Gaz. méd. de Paris*, Tom xi., 1856. Günzburg, 1856, Breslau, 'Studien zur speciellen Pathologie,' vol. ii. Werdmüller, *Schweizer Zeitschrift für Medizin*, 1856, Heft 3. Bouvier, *Leçons cliniques sur les maladies chroniques de l'appareil locomotrice*, Paris, 1858. Remak, Robert, 'Untersuchungen über die Entwicklung der Wirbelthiere,' Taf. III., Fig. 49. Schultze, Virchow's *Archiv für path. Anatomie, Physiologie*, etc., Band xxii. Neugebauer, Nägele's *Geburts-hilfe*, Mainz, 1863. Förster, Aug., 'Die Missbildungen des Menschen,' Jena, 1865. Hyrtl's 'Topo-graphische Anatomie.'

Dr. Burgl also refers to the cases reported by Dr. Scheele (see the *Berliner Klinische Wochenschrift*, for July 12 and 19, 1875), and gives the bibliography appended to Dr. Scheele's cases (see LONDON MEDICAL RECORD, Sept. 15, 1875.) He also appends the following remark. Guttman considers these malformations as most common in the male sex. There are now several cases on record in which malformed parents have had well formed children, and there are others of hereditary transmission. The remainder of the paper is taken up with a discussion of the mode in which these transpositions may occur in the embryo. There is little of novelty to those who are familiar with Von Baer's and Rindfleisch's writings. Hyrtl is quoted as an authority for the non-transmission of such defects, and so is Schultze. In the original paper, the four new cases are reported at great length. W. BATHURST WOODMAN.

COLIN ON DIAPEDESIS OF LEUCOCYTES IN MAN. M. Colin (*Archives de Médecine*, December, 1875), finds in the melanotic deposits, which are found in malarial poisoning, a proof of the diapedesis of leucocytes in man. He does not believe that the pigment-deposit found external to the vessels and within the substance of their walls is the result of the decomposition of the red corpuscles *in loco*. The pigment in both instances has its origin in granules, which were first contained in the circulating blood, and were finally extravasated. The mechanism of the extravasation is found in the white corpuscles, which become charged with the pigment and then pass out of the vessels.

This diapedesis is present in health, but is not evident, as the corpuscles do not then contain pigment.

WEIGERT ON LESIONS IN PARENCHYMATOUS ORGANS IN SMALL-POX.—Weigert (Breslau, 1875), describes in the viscera, in cases of variola, small circumscribed nodules enclosing cellular masses, which he believes to be analogous to the pustules of the skin. He has found them in the liver, spleen, kidneys, and lymphatic glands. They consist of a well-defined wall enclosing a granular mass. In many places they are enclosed by a membrane, sometimes nucleated, which perfectly resembles the wall of a blood-vessel. In the kidney and liver, they are found in the vessels. In the kidney they are present in the glomeruli, and (not so frequently) in the medullary substances. In the liver they are found more frequently in the parenchyma than in the capsule. Except in the glomeruli, they are not found in the arteries properly so-called, occupying on the other hand the capillaries and small veins.

[The author is one of those who believe that bacteria produce such results as those which he has described.]

TAMASSIA ON THE CHANGES THAT TAKE PLACE IN PUTREFYING TISSUES.—The author's studies (*Rivista Sperimentale di Freniatria e di Medicina Legale*, 1875), relate especially to muscle and tendon, his object being to study from day to day the modifications produced in the normal structure of the putrefaction of tissue. With this view, he allowed fragments of muscles and tendons to putrefy in air, in water, in the soil, and in urine, and noted daily the changes which he observed.

The principal results described are as follows. When putrefaction begins, the muscular fibre swells, its substance becomes opaque and yellowish. After the fourth day, if the muscle have been exposed to the atmosphere or have been in the soil or water, and after the third day, if it have been in urine, there form within the sarcolemma yellow, highly refractive irregularly discoid granules, insoluble in ether and chloroform, and appearing to be derived from the albuminoid substances of the muscle, and more especially from the sarcous elements. Later, these granules break up into fragments, and become extremely fine. The complete disappearance of all contractile substance takes place in water about the forty-second day, in the soil about the thirty-sixth or thirty-seventh day, in the atmosphere about the thirty-fourth day, and in urine about the thirtieth day. The sarcolemma becomes opaque, and after the eleventh day in water, the ninth in the soil, the seventh in the atmosphere, and the fifth in urine, it exhibits partial ruptures. It disappears by resolution into very fine opaque granules after eighteen days in water, seventeen in the soil, fifteen in the atmosphere, and thirteen in urine. Tendons resist much longer than muscles. They first begin to change in water on the thirtieth day. They become yellowish and longitudinal striæ divide the substance into finer and finer bundles. This is produced by the substance proper of the tendon resisting putrefaction much longer than the substances which bind the bundles together. As these disappear the tendinous fibrillæ become free. Later, about the forty-fifth day of maceration in water, the fibrillæ become yellowish, break up, and begin to be resolved into a mass of granules. Their disappearance is complete about the seventy-fifth day.

COHNHEIM ON CONGENITAL STRIPED-MUSCLE SARCOMA OF THE KIDNEY.—The kidneys (Virchow's *Archiv*, Bd. lxx.), were from a child which was healthy during the first twelve months after birth, then sickened, and died three months later. Both kidneys were invaded by tumours, which were found on microscopical examination to be composed of striped muscular fibres. The fibres were small, long, and interwoven. A sarcolemma was not discovered. In other parts, but not so plentifully, the typical structure of a sarcoma was found.

This is the first time that these very rare tumours—striped muscle sarcoma—have been found in the parenchyma of the kidney, where their presence constitutes a veritable monstrosity. The fact that both kidneys were affected tends to show, according to Cohnheim, that there was an original faulty growth, and not a metastasis. It is impossible to understand what the histological elements were that formed the point of departure for the muscular fibres.

BOISSIER AND CORNIL ON UNUSUAL DEVELOPMENT OF CARCINOMA.—In the *Bulletin de la Société Anatomique*, (Paris, 3e série, tome x. 1875), a very interesting and rare case is described of 1st carcinoma developed in a new growth; 2nd, carcinoma of a suprarenal capsule, a rare affection.

Clinically there was nothing special; the symptoms were those of abdominal cancer. At the necropsy, the body and cervix of the uterus were displaced, but without any alteration of their tissues.

Two tumours were found, one of which, as large as the head of a foetus at term, was attached to the uterus. Examination of the tumours, by M. Cornil, showed a peripheral layer of smooth muscle enclosing tissue of encephaloid cancer. A similar cancerous production was found on the right suprarenal capsule.

The obscure point in the case is relative to the origin of the cancer. It is impossible to know whether it began in the suprarenal capsule or in the myoma. It is certain that the myomata existed first, and that cancer developed in their interior.

RECENT PAPERS.

On the Influence of Purging and Inanition on the Proportion of the Red Corpuscles contained in the Blood. By M. Brouardel. (*L'Union Médicale*, Sept. 16.)

Perilobular Hypertrophic Cirrhosis. By Dr. Brochin. (*Gazette des Hôpitaux*, Sept. 16.)

Progressive Muscular Atrophy. By M. Rigal. (*Ibid.* Sept. 19.)

The Urea in Diabetic Urine. By Dr. T. Tommasi. (*Lo Sperimentale*, Sept. 1876.)

MEDICINE.

BETZ ON A PATIENT WHO WASHED OUT HIS OWN STOMACH.—In Betz's *Memorabilien*, Jahrgang xxi. Heft 4, Dr. Friedrich Betz narrates the following case. The patient, a merchant, who had been a sugar-baker, now forty-nine years of age, had suffered from dyspepsia ever since he was fifteen years old. In the beginning he suffered chiefly from a horrible feeling of hunger, with collections of saliva in his mouth, hiccup, and pyrosis. For some time a milk-diet relieved this. He could never bear smoking, nor fatty or farinaceous food. In the course of time, all these symptoms grew worse, and then he had severe pains in his stomach; then actual vomiting of sour smutty-coloured masses; with obstinate constipation, loss of sleep, etc. For about a year and a-half his condition was a horrible one. The epigastric pain was almost unbearable; he vomited more than he ate; and his strength failed rapidly. After Dr. Betz had satisfied himself by percussion and auscultation that the stomach was dilated, and retained its contents, he proceeded to use the stomach-tube. The contents of the stomach were neutralised and diluted with warm water containing carbonate of soda. Cold water could not be borne. Only the tube was used, not the stomach-pump. The first attempts set up a little pharyngeal and oesophageal irritation, but this soon subsided. In the intervals, anti-fermentative and tonic remedies were used. The diet was restricted as to quantity and quality. The exacerbations were relieved by hypodermic injections of morphia, and cold compresses to the anterior surface of the body, clysters, etc. Sometimes the pain appeared to be due to peritonitis. As he lived too far from Dr. Betz for him personally to use the stomach-

pump, the local surgeon did so ten or twelve times. But one night, the tube being kept in the house, the patient felt so urgent a need to empty his stomach, that he seized the tube, introduced it himself, and filled the funnel with water; then, by simply bending forward, as had been done before, the diluted fluid escaped. For the last five weeks he has had resort to this means, but whether finding that filling the funnel was too slow for him, or too troublesome, he has had recourse to the following plan. He has two or three vessels of hot water, holding nearly a pint each, near him, and drinks one of them. He then introduces the oiled tube, whilst sitting; he then stands up, bends forward the upper half of the body, and lets some of the water run into a basin. Then he drinks the second glass, repeats the manœuvre with the tube, and continues till the fluid comes back clear from the stomach. He takes account how much goes in, and how much comes out. In general the latter exceeds the former. This treatment has done him good; his appetite is better, the bowels are regular, and his strength improved, so that he can walk for an hour comfortably. He takes baths of the Neckar water, and is gaining weight. He is so fond of the tube, that he takes it with him in travelling. He overcomes the difficulty caused by the cricoid cartilage projecting behind, by drawing a deep breath. The introduction of the tube no longer gives him pain. If the lateral openings be stopped up, he simply withdraws the tube, cleanses it and puts it in again. It is an English tube, with an olive-shaped end. It must be well oiled. He thinks, perhaps correctly, that he would not have suffered so much if the tube had been used earlier in his complaint. Dr. Betz proposes to try electricity in this case if the stomach does not show some power of contraction upon its contents in a reasonable time. There is no tumour, but very probably callous thickening of the pyloric end. It is interesting to note how quickly the removal of the acid contents relieves the pain, so that it seems likely that there is a direct irritation of the nerve-terminations in cases of this kind. However, he says the object of his paper is not to describe the pathology of this patient's dyspepsia, but rather its therapeutic technology, 'the remarkable thing,' as the patient calls it, of his success in washing out his own stomach. It may encourage others.

'Sibi quisque inde exemplum expetat.'—PLAUTUS.

ROTHER ON INTERMITTENT DIARRHŒA.—In Betz's *Memorabilien*, Jahrgang xxi., Heft 4, Dr. C. G. Rothe, of Altenburg, writes that, during the sixteen years in which he has practised there, he has repeatedly met with cases of diarrhœa, accompanied with severe colicky pains, which have proved rebellious to ordinary therapeutic measures, and were marked by a striking periodicity. Lastly, they were rapidly cured by quinine. Two such cases which occurred lately may serve as examples.

1. Mrs. Brauer, aged twenty-five, a labourer's wife, of stout build, and always healthy, consulted Dr. Rothe on September 13 last, on account of diarrhœa with acute pains in the abdomen, resembling labour-pains. Her general health was but slightly affected, her appetite fairly good, so that she was able to do her household work without interruption. Looking on it as an ordinary case of catarrh of the intestines, Dr. Rothe ordered, empirically, an iodised carbolio acid mixture, and regulated diet; but three days

brought no improvement. He then ordered acetate of lead, with rhubarb and opium, of the latter 3 centigrammes every three hours ($\frac{3}{4}$ grain nearly), and ordered her to keep in bed. After another three days, she was rather worse than better. There was no particular tenderness on pressure, and the tongue was not much furred. On closer questioning, however, he learnt that the patient felt pretty well all day long, until about 7 o'clock in the evening, when she was regularly attacked with severe colic, followed by liquid stools, and again had an interval free from pain and diarrhoea till the next evening. Remembering former experiences, he now ordered 1·2 gramme of sulphate of quinine (about $18\frac{1}{2}$ grains) divided into four doses, one to be taken every three hours. Next morning the patient had had a quiet night, free from pain and diarrhoea, and she remained free from them afterwards.

2. Herr K., a machinist, aged twenty-six, also strong and healthy, was attacked on April 16, with profuse diarrhoea, which had been preceded by colic. The attacks could not be referred either to a chill or to any error in diet. When he had taken the carbolic drops for some days without relief, he expressed his surprise that the attacks should always begin at a fixed time toward mid-day, and then occur twice in the night, whilst from midnight and during all the forenoon he was quite free from his troubles. A few doses of quinine did their duty within twenty-four hours.

Most of Dr. Rothe's cases of this kind were in adults, but there were some also amongst children, in which quinine had the like success. He has no exact notes of these, but thinks the number must have been some fifteen to twenty. Whether this intermittent diarrhoea may be due to some powerful affection of the sympathetic nerves, perhaps even of the solar plexus, and the vaso-motor nerves, he does not pretend to say, any more than he can determine what sort of irritation of a specific kind could occasion such a neurosis. The fact that one of the cases above described occurred in the highest part of a hilly city, and that the other happened in one of its lowest-lying parts, near the railway, whilst there were no attacks of intermittent fever at the time, appeared to exclude malarious influences. The periodicity, and the uselessness of ordinary remedies, were the only distinguishing characters of the affection.

[No remark is made as to temperature in these cases. It was possibly normal in the intervals.—*Rep.*]

WOLF ON A CASE OF ACUTE YELLOW ATROPHY OF THE LIVER.—Dr. Wolf, assistant-surgeon at Carlsruhe, writes an article to Betz's *Memorabilien*, Jahrgang xxi., Heft 3, of which the following is an abstract. He first discusses the pathology of the affection, giving the views of Frerichs, Rokitsansky, Traube, Hensch, Von Dusch, and others, noting the remarkable fact that out of thirty-one cases twenty-two were in females, and half of these were pregnant. The disease is, however, still rare enough to justify the publication of the following instance, from the Garrison Hospital of Carlsruhe in 1873, especially as there were some peculiar features in the case.

K. St., aged twenty-two years, had very early suffered from repeated attacks of dyspepsia. On October 10, 1873, he felt ill, after eating sausages. His symptoms increased till the 22nd, when he vomited after a meal of the same kind. Ever since

he had suffered from general malaise, fatigue, loss of appetite, bad taste in the mouth, and pressure and fullness in the stomach; and was admitted into the hospital on the 24th for these, and more especially for commencing jaundice. He was fairly nourished but of weak constitution. There were a yellowish-grey tinge of the skin and conjunctivæ, etc.; large white-coated tongue; pressure on the stomach was painful, not so over the liver; the size of the latter appeared to be normal. Liver dulness began in the right axillary line with the upper edge of the sixth rib, in the mammillary line with the fifth rib, and extended downwards four or five inches. The bowels were confined. He was ordered infusion of rhubarb with bitartrate of potash. On October 29 the jaundice was rather deeper. The urine showed bile-pigment; the tongue was still coated; the appetite was better; the bowels were now regular; the patient felt better, and sat up yesterday. Pulse slow and full. No fever. Evening temperature $36\cdot4^{\circ}$ Cent. ($97\cdot52^{\circ}$ Fahr.). The patient continued to improve steadily, when a fellow-patient died somewhat suddenly in the same room at 11 P.M. of acute oedema of the lungs. The necessary treatment greatly excited this jaundiced patient. On November 1, although the urine of the day before contained bile-pigment, without albumen, it was as clear as crystal, and had no trace of bile-pigment, but, on heating the urine with nitrate of silver and excess of ammonia, the silver was reduced. It also reduced copper in the presence of an alkali. A drop was dried on a slide to a syrupy mass, but no crystals could be detected in it. At noon he vomited, without knowing why. On November 2 the jaundice was deeper; there was no itching of the skin. The stools were solid and white. He seemed rather dull, and asked for a night nurse; then said he was quite well, and did not want a nurse; then complained of weariness, and soon fell into a comatose state. When awakened from this, he gave rational answers. Pulse regular, but a little quicker than before (72). Temperature as before ($36\cdot4^{\circ}$ Cent. In the afternoon he had a loose stool. The urine was still quite like water. On November 3 in the morning the patient was rather duller, and only answered when shaken and shouted to. The pulse had risen to 96. The tongue had a smutty appearance. The urine was perfectly clear, and free from pigment; it left no precipitate on evaporation. The left lobe of the liver scarcely reached the middle line. The upper limits of the right lobe began at the sixth rib, the lower border no longer reached the edge of the lower ribs. Percussion seemed to give him pain. The spleen was not enlarged. The skin was dry, the pupils were large, and reacted very sluggishly. On account of the persistent coma a warm bath and cold shower-bath were combined, but had no special effect, except that the skin was a little moister. Attempts at vomiting supervened, without actual vomiting. In the afternoon, his urine came away from him, staining his bed and shirt an intense yellow colour. Breathing was deep and regular (sixteen per minute), temperature $37\cdot6^{\circ}$ Cent. ($=99\cdot68^{\circ}$ Fahr.). Towards evening, about every hour and a half, he breathed more deeply and quickly, and gnashed the teeth, and had spasmodic movements of the arms towards the chest, especially when the region of the liver or that of the bladder was pressed upon. The belly was retracted. At 6 P.M. a peculiar unpleasant sweetish cadaverous smell was noticed in his breath,

and soon filled the room. Temperature $36^{\circ}8'$ Cent. ($=100^{\circ}4'$ Fahr.) On November 4 he passed the night in a state of deep coma. The respirations were deep and regular, though sometimes interrupted by quicker and shallower ones, generally accompanied by trismus and convulsions. Pulse small and frequent (118), but regular. The urine was passed unconsciously, strongly tinged with bile. The stomach being rather firmly pressed, he vomited a small quantity of a brownish red fluid. Temperature $38^{\circ}2'$ Cent. ($100^{\circ}76'$ Fahr.) The liver dulness had become still smaller, and between the right mammillary and axillary lines, it was scarcely of the width of a hand. The pulse and respirations were as before. There was the same peculiar smell. Slight œdema supervened. The convulsions became more marked and general. Towards 5 P.M. he vomited twice, but only a little epithelium from the mouth was found in the vomit. His blood contained numerous white corpuscles. Pupils widely dilated, and did not respond to light. Temperature $38^{\circ}6'$ Cent. ($=101^{\circ}$ Fahr.) At ten minutes past 5 P.M. he died.

At the *post mortem* examination, besides the signs observed in life, there was considerable venous hyperæmia of the dura mater, which was rather adherent with numerous Pacchionian glands. The longitudinal sinus was full of dark red blood. The veins of the pia mater were gorged with blood. There was some serum between the convolutions, and about two tablespoonfuls of blood-stained serum in the posterior fossa of the skull. Numerous puncta cruenta were seen on slicing the brain. There was some fluid in the left pleural cavity. Pleural adhesions were found on the right side. Some fluid was contained in the pericardium. The heart was flabby, the valves healthy, but the papillary muscles had undergone some fatty degeneration. The posterior part of both lungs was filled with dark blood (hypostatic congestion). The bronchi were full of frothy fluid. The stomach contained a little black smeary fluid; its mucous membrane was somewhat strongly corrugated in the greater curvature, and showed numerous old extravasations in the fundus, and recent ones at the pylorus. The spleen was not enlarged; its capsule wrinkled. There was considerable venous hyperæmia of the kidneys; commencing granular parenchymatous degeneration. There was also a yellowish coloration of the pyramids. The liver was not at all adherent, but was diminished in all its diameters. The left lobe measured from before backwards only 11 centimètres ($4\frac{3}{8}$ inches), the right lobe measured in the same direction 16 centimètres ($6\frac{1}{2}$ inches); in breadth the left lobe was 8, and the right 12.5 centimètres ($3\frac{1}{4}$, and a little under 5 inches). The thickness of the left lobe was only 2 centimètres ($\frac{3}{4}$ of an inch), that of the right 4 centimètres ($1\frac{5}{8}$ inches). The whole weight of the liver was only 630 grammes (less than 20 ounces). Its capsule was wrinkled. The posterior part (by hypostasis) was of a dark brownish red, but showed numerous little projecting 'islands' of a lighter yellow colour varying in size from a pin's head to the size of a small apple. Similar spots appeared on the upper surface of both lobes, especially on the left, like Spigelian lobes. On section, similar bright yellow spots appeared, like small knobs. Perfect acini were not easily recognised in the almost everywhere soft and sodden tissue, but where present, the liver-cells appeared somewhat enlarged, often with double nuclei, and they had also undergone some fatty degeneration. In general

the microscope showed little but formless detritus, numerous granules, drops of oil, heaps of acicular crystals of tyrosine, and globules of leucine, along with fibres of unaltered stroma. The bile-ducts and gall-bladder were pervious, but empty.

The effects of terror on this patient's urine and on his disease were very remarkable. One symptom common in acute yellow atrophy, viz. enlargement of the spleen, was absent. Frerichs, however, met with four out of twenty-three cases of this disease, in which the spleen was normal in three, and small in the fourth.

ZIMMER ON LEVULOSE IN THE URINE IN DIABETES.—In the *Deutsche Medicinische Wochenschrift*, for July 13, 1876, Dr. Zimmer, of Carlsbad, writes on the occurrence of levulose (left-handed glucose) in the urine of a diabetic patient. The patient, Dr. V., aged twenty-nine, was a Dutch military surgeon, of the Jewish faith. His father died at sixty, after suffering from jaundice about a year. The mother seems to have died young, of phthisis. The paternal grandfather seems to have had diabetes during his last (sixty-ninth) year of life. Dr. V. had several attacks of jaundice in 1864 and 1865. He had also been troubled with boils and muscular rheumatism, and in 1873 and 1875 had attacks of intestinal catarrh. The last was very severe for one week, and only yielded to large doses of opium. From this time he had not only great thirst, but polyuria also, and he became so weak as to be forced to give up his hospital duties. Since the middle of July last his complaint had undoubtedly been diabetes mellitus, and he lived on an almost exclusively meat (flesh) diet. Under this regimen the urine had a specific gravity of 1026 to 1030, and contained about 2 or 3 per cent. of sugar. On reaching Carlsbad, on August 28, 1875, he only weighed eight stone, clothes and all (fifty-one kilos). There were then large appetite, great thirst, extreme weakness, slight splenic enlargement, but nothing abnormal was detected in heart, lungs, or liver. There was no smell of acetone in the breath. Taste was normal. A highly nutritious special diet was ordered him, and it is believed that he strictly adhered to this. The sugar slowly but gradually diminished. August 29: Twenty-four hours' urine was 4 litres (about 140 ounces). It was rather strongly yellow, had a strong acid reaction, was free from albumen, and clear when first passed. After long standing, some uric acid crystals and epithelium were deposited. The urine in the day-time had a specific gravity of 1055, and, when tested with Fehling's solution, showed 9.8 per cent. of sugar. On decolourising it with plumbic acetate, and placing it in the polarising apparatus, Dr. Zimmer found, to his astonishment, left-handed polarisation, not doubtfully, but indicating 2.2 per cent. of left-handed sugar, or levulose. [The observed, not the calculated, percentages are given.] As this left-handed polarisation was indubitable, and yet did not agree with the high specific gravity, or the results of the copper test, it was resolved to repeat the observation on other days. September 2: Twenty-four hours' urine = 140 ounces. Specific gravity of day urine, 1042. Sugar by copper process, 5.3 per cent. The polariser showed levulose. The night urine had a specific gravity of 1018. Sugar not estimated. September 8: Twenty-four hours' urine = $2\frac{1}{2}$ litres (88 ounces). Specific gravity of day urine, 1020; sugar 1.56 per cent. Levulose, by polarisation, 0.5 per cent. Specific gravity of night

urine, 1013; only a faint trace of sugar by copper test. Result of polarisation also null. September 17: Urine = $1\frac{1}{2}$ litre ($46\frac{3}{4}$ ounces). Specific gravity of day urine 1019; levulose by polarisation 0.3 per cent. It was difficult to estimate the sugar by copper. A smutty yellow colour was produced on heating with copper, and the precise limits of colouration were not easily defined. Specific gravity of night urine = 1015. Sugar not estimated. On the 18th he suddenly left Carlsbad, on account of an uncle's death. The result of the twenty-one days' dieting and drinking of the 'Mühlbrunn' water was so far favourable. He had gained nearly four pounds' weight, and the sugar was reduced to traces. By letter dated February last, the improvement is said to have continued up to date. Dr. Zimmer calls attention to the following facts. 1. This urine reduced the copper test very quickly and freely. It never displayed right-handed polarisation. The urine always showed left-handed polarisation. These combined properties of reduction and left-handedness distinguish levulose, or fruit-sugar. 2. So far as Dr. Zimmer knows, levulose has only been found in urine by Gorup-Besanez, and once (for a short time only) by Seegen. The reason may be either that it is really rare, or that it is overlooked, since it can only be distinguished from grape-sugar by its optical properties, for it reduces copper, forms alcohol and carbonic acid by fermentation, etc. Even in the polarising apparatus, if only small quantities be present along with a quantity of grape-sugar, it may easily be overlooked. 3. Külz found, both in mild and severe cases of diabetes, that the excretion of sugar was not increased by either grape-sugar or inulin. Both these substances must therefore have been assimilated. Although this kind of sugar may be easily assimilated, we must not hastily assume that it is harmless in diabetes, since, as Dr. Zimmer remarks, his patient was only taking a very moderate quantity of almond biscuits (*Mandelzwickbäck*), and soup or broth containing roots of different kinds, and yet for three weeks continued to excrete levulose. Moleschott, indeed, says that almonds only contain cane-sugar. However, Külz's observations and those of Dr. Zimmer render it probable that this is decomposed in the body into levulose and grape-sugar. 4. This patient's urine contained grape-sugar as well as levulose. As on August 29th, 9.8 per cent. of sugar was indicated, had this been all levulose the polarisation would have indicated twice as much, or 19.6 per cent., for it is well known that the angle of deviation to the left in the levulose is twice as large as that to the right from grape-sugar. But since, on August 29, only 2.2 per cent. was indicated, it is clear that another kind of sugar must have been present. Had these been present in equal quantity, the negative or left-handed polarisation would have been 4.9 instead of 2.2 per cent.

Dr. Zimmer discusses the relations of glycogen to different kinds of food. We need not follow this discussion. He thinks his own experience confirms that of Külz. He therefore recognises three forms of diabetes: (a) a slight form, in which sugar is excreted only on mixed diet; (b) a severe form, in which, when all vegetable diet is withdrawn, sugar is found in the urine, being formed at the expense of albuminates; (c) a mixed form, in which sugar sometimes occurs when carbohydrates are taken, whilst at other times it is found even after long use of an animal (flesh-meat) diet. Dr. Pavy has noted such cases, for he reports one in which a few ounces

of bread caused sugar to appear in the urine, and this lasted some days, more sugar being excreted than was ingested. These forms do not tend to pass one into the other, according to Dr. Zimmer's experience (now extending over several years). He has never seen the slight form pass into the more severe one. The mixed cases once now and then become more severe. He thinks this an argument against the view that diabetes mellitus is simply a disturbance of the glycogenic functions of the liver.

W. BATHURST WOODMAN.

EXTREME SLOWNESS OF PULSE.—M. Tillaux has recently had among his cases at the Lariboisière hospital, some instances of extreme slowness of pulse. The following account of one of them is taken from the *Gazette des Hôpitaux*, August 12, 1876. The patient was a man aged seventy-six, a rag-picker ('chiffonnier'), who had come into the hospital to be treated for a hydrocele of the left side. The most remarkable thing about him, however, was the extreme slowness of his pulse, twenty-one pulsations a minute on an average. Last year he was in the hospital for a hydrocele of the other side, but at that time nothing abnormal drew attention to his circulatory apparatus. The man complained only of his hydrocele, and was of a jovial disposition. The pulse was regular, and the cardiac revolution appeared to be almost as rapid as in the normal state; the two sounds and the short interval which separated them scarcely occupied half a second; it was the long interval which was so extraordinarily prolonged, lasting almost two and a-half seconds. This long interval was complete in all senses of the word; absolutely nothing could be heard in the heart. With the first sound, on the contrary, commenced a distinct murmur, which continued during the short interval, and terminated abruptly with the valvular click which constituted the second sound. It was divided, so to speak, into two parts; for, at first very clear, it diminishes, and then gained in force until the moment when it finished. Its maximum was towards the apex of the heart; it was there that it was loudest; it might be heard, also, towards the base, but more dull; it might equally be found prolonged towards the axilla, even outside the left nipple. The heart appeared large; the apex beat further out and lower down than normal. There was some emphysema of the lungs, and some times sonorous rhonchi momentarily interfered with auscultation of the heart. The pulse was taken four days running; on Monday it was 21, on Tuesday the same, on Wednesday 22, on Thursday 21. Generally it was perfectly regular; the intervals were equal, and the cardiac revolutions maintained the same duration. The patient, after a few days, showed signs of œdema of the legs and trunk.

W. DOUGLAS HEMMING.

SACHS ON THE HEPATITIS OF HOT CLIMATES.—In an article in the *Archiv für Klinische Chirurgie*, Band xix. 1876, Sachs says that the predisposition of the inhabitants of tropical countries to suffer from affections of the liver depends on diminution of the respiratory function, and compensating development of the functions of the liver. Amongst the efficient causes, the foremost is the use of alcoholic drinks. Hepatitis is not, as is generally believed, consecutive to dysentery, but dysentery often depends on hepatitis. The invariable sympathetic pain in the right cervical, clavicular, and scapular regions, he attributes to irritation of the terminal fibres of the

phrenic nerve, which sends branches to the liver by the suspensory ligament. The tongue is white, moist, and thickly coated; there are loss of appetite, nausea, and rarely vomiting. Insomnia is a well-marked symptom. The temperature is not high; when it goes beyond $39^{\circ}5$ Cent. ($103^{\circ}1^{\circ}$ Fabr.), a complication is indicated, such as thoracic affections, which often cause death.

BOCHEFONTAINE ON PRODUCTION OF EPILEPTIC ATTACKS IN MAN BY TICKLING THE SKIN OF THE NECK.—In the *Archives de Physiologie*, 1875, Bochefontaine records the case of a man affected for several years with epileptic dementia, who had paroxysmal attacks separated from each other by short intervals over a period of several days, the mental capacity being completely effaced whilst the crises lasted. Besides the true paroxysms, the patient suffered from attacks of partial epilepsy, which were much less violent. He was warned of the latter attacks, and had time to sit down.

This man had an epileptogenic zone analogous to that of guinea-pigs, in which the sciatic nerve has been cut. The patient being seated, the experiment was made during one of the calmest intervals between two attacks, M. Bochefontaine tickling the lobule of the left ear, and the corresponding cervical region with a feather. The patient was immediately seized with one of the lesser paroxysms. The experiment was several times repeated, and always with the same results.

G. THIN, M.D.

RECENT PAPERS.

- On Hypertrophic Cirrhosis with Icterus. By M. Charcot. (*Le Progrès Medical*, Sept. 16.)
 Croup, Tracheotomy, Dysphagia, and Consecutive Facial Paralysis. By M. Odin. (*Lyon Médical*, Sept. 17.)
 Some Considerations on the Value of Aphonic Pectoriloquy in Pleural Effusions. By Dr. Noel Gueneau de Mussy. (*L'Union Médicale*, Sept. 9.)
 Case of Croup, Tracheotomy: Death. By M. Bouchut. (*Gazette des Hôpitaux*, Sept. 21.)
 On a Case of so-called Essential Anæmia. By Dr. Lépine. (*L'Union Médicale*, Sept. 26.)
 On the Sleep produced by Ether. By M. Fontain. (*Lyon Médical*, Oct. 1.)
 Contribution to the History of Ophthalmic Goitre: Co-existence of Chronic Symptoms. By M. Gagnon. (*Gazette Hebdomadaire*, Sept. 29.)
 On Dysphasia in Progressive General Paralysis. By M. Clovis Gallopin. (*Annales Médico-Psychologiques*, Sept. 1876.)
 On Progressive Atrophic Paralysis. By Dr. Silvestrini. (*Lo Sperimentale*, Sept. 1876.)
 On the Diagnosis and Treatment of Internal Intestinal Obstructions. By Dr. Barduzzi. (*Ibid.* August and September.)

DISEASES OF CHILDREN.

KERSCH ON PERITONITIS IN CHILDREN.—Dr. Kersch, of Prague, in commenting (Betz's *Memo-rabilien*, vol. xxi. Heft 2) upon the difficulty of determining the presence of peritonitis in children, concludes that the character of the breathing furnishes an almost pathognomonic symptom. Every deep inspiration produces pain in the hypochondria, and the breathing is therefore shallow and frequent, and is of the thoracic type. There is no impediment to expiration, and consequently the child can still cry vigorously. The characteristic breathing, then, consists of a long expiration followed by a series of extremely short inspirations, and, as a rule, each

expiration is accompanied by a cry of the same duration. If this symptom be associated with a drawing up of the limbs, the diagnosis may be considered certain. The prognosis is more favourable than in adults, at least as regards life; but when it occurs in girls between the ages of five and eight, the author believes that it is an important factor in the production of subsequent sterility; indeed, all the cases that he has known have had this result. Ten cases which were attacked between the ages of five and fourteen years, have been watched by the author. All have now been married some years, and all are childless. In the treatment of peritonitis in childhood, if the ordinary measures fail to reduce the quantity of fluid, Dr. Kersch employs puncture; if the fluid do not escape readily, he keeps the wound open for some days, or, should this heal prematurely, he makes a second puncture through the scar of the first one.

Two cases are appended. One of these, a girl, aged five and-a-half years, had been much neglected, and when seen was in a condition bordering on collapse. The ordinary means were tried for a short time, but without effect. Puncture was then resorted to, and was performed in all three times. At the end of two months the child was quite strong and healthy. The other patient, a girl, at fourteen, recovered without puncture. She was treated with large doses of quinine, morphia in weak solution, and cold compresses to the abdomen. She is now twenty-four years old, and has been married six years, but has no children. The author believes the barrenness to be due to the contraction of a layer of lymph which has been deposited upon the ovaries, and the consequent interference with the nutrition of these organs.

UNTERBERGER ON RELAPSING FEVER IN CHILDHOOD.—In an interesting paper in the *Jahrbuch für Kinderheilkunde*, Band x. Heft 1 and 2, Dr. Unterberger, of St. Petersburg, details his experience of forty cases of relapsing fever in children. The blood of every patient was microscopically examined, and, during the pyrexial stage, spirillæ were constantly present. Their number varied very much, even within a few hours. Their movements were most lively towards the end of the febrile stage; in the apyrexial stage, with one exception, they were never visible. The spirilla is described as an extremely thin, spirally twisted fibre of the length of from two to three or more blood-corpuscles, and of the thickness of a corpuscle seen in profile. The author has looked for them in vain in many other infectious diseases, and attaches, therefore, such importance to their presence, that he affirms that there can be no relapsing fever without spirillæ, and no spirillæ without relapsing fever. The other changes in the blood were that the colourless corpuscles were increased in number, and that epithelioid cells, often in a state of fatty degeneration, were present. The remarks on etiology are confirmatory of what is already believed. No patient had less than two paroxysms; a third occurred in nineteen out of the forty; a fourth, in one only. In seventeen of the cases, the crisis was preceded by a pseudo-crisis, which lasted from eight to thirty-six hours, and was characterised by a reduction of temperature with either sweating or diarrhœa. The true crisis occurred from twelve to twenty-four hours later; the temperature meanwhile having risen. The average duration of the first febrile attack was

6 days; of the first remission, 6·7 days; of the second attack, 5 days; of the second remission, 7·3 days; and of the third attack, 3·5 days. The highest temperature recorded was 108·6° Fahr. The body-weight, owing to the excellent appetite of the patients, was very slightly affected. The pulse-rate did not fall suddenly at the crisis, but was some days before it reached the normal standard. This is important in the differential diagnosis between this disease and typhus. Of the complications, those affecting the respiratory system were rare and trivial. With the circulatory system it was otherwise; for organic disease of the heart supervened in five cases. Anæmic murmurs were noticed in seventeen. The condition of the tongue the author considers very characteristic; it was broad, pale, moist, and slightly coated. Vogel's red triangle was never seen. Parotitis was present in two cases; iritis, with opacity of the vitreous body, also in two. Other complications occurred only in single cases. There was no hebetude, even when the temperature was at its highest. The liver, especially its left lobe, was always enlarged and tender, and icterus was observed in five cases. The enlargement of the spleen, which was constant, was very rapid, and preceded that of the liver. Pain in these organs was elicited by palpation; and, when the increase in size was very great, by the least movement of the body. With the remission, the hyperæsthesia ceased, and the spleen became softer and smaller. The urine presented nothing characteristic; albumen was never detected. The skin was pale at first, waxy or ashy afterwards. A macular erythema was present in two cases; herpes labialis in three; œdema, affecting chiefly the scrotum, in two. An alteration in the nails was not looked for, except in the last few patients admitted. The characteristic sign, Dr. Unterberger believes, consists in dull transverse stripes, in number corresponding to that of the paroxysms.

In the treatment, besides the usual indications, the importance of reducing the size of the spleen is insisted on. For this purpose, electricity was employed, and, under its influence, the organ speedily diminished in size. In one case, this diminution was accompanied by a corresponding increase in the size of the liver, as already observed by Botkin. From the difficulty of applying electricity in private practice, and from the resistance offered to it by children, it was afterwards abandoned in favour of ice-bags with equally good results. To reduce the temperature, salicylate of soda was employed, and was found preferable both to the free acid and to the ammonium salt. But, although the temperature was lowered, the appetite was so much impaired that cold baths were substituted for it. No drug appeared to exercise any influence on the vitality of the spirillæ. One patient died; and, at the necropsy, the spleen showed five infarcts of the size of a hazel-nut, and one of the size of a hen's egg; the liver was fatty; the peritoneum contained nearly two pints of greenish flocculent exudation. The endocardium was much injected, and the posterior segment of the mitral valve was retracted, and was fringed with reddish growths as large as peas.

LÖCHERER ON A CASE OF CONGENITAL ICTHYOSIS.—The subject of this paper (*Aerztliches Intelligenzblatt*, July 11, 1876) was born at full time, of a perfectly healthy mother, who had previously had three children. No skin-disease existed in any member of the family. The child, when born, was

entirely covered by a leathery armour, which, in many places, showed fissures and bleeding depressions. These last rapidly increased in size and number. The layer felt like hard leather, and was from one-eighth to three-sixteenths of an inch in thickness. Its colour was at first white, afterwards a dirty yellow. The rigidity of the layer had retarded the development of the fingers and toes, as well as that of the nose, lips, ears and eyelids. The nose projected very slightly beyond the face, and seemed, at first sight to consist only of nostrils. The mouth was always wide open, and the upper lip did not cover the jaw. In the place of eyes, two red swellings were all that could be seen—these were the everted eyelids. There were no fissures on the hands and feet, which indeed were puffed in such a way as to resemble spina ventosa. The fingers and toes were rudimentary; though nails and phalanges were all present in miniature. The child lived two days.

RALPH W. LEFTWICH, M.D.

MABBOUX ON FISSURE OF THE ANUS IN AN INFANT.—A case of this kind, occurring in a girl aged two months, is described in the *Gazette des Hôpitaux* for August 5. It derives its interest from the extreme rarity of the affection in childhood. The symptoms which pointed to the affection resembled those observed in adults—great pain on defecation, constipation, spots of blood on the motions, etc. The fissure was found on the right side, between two folds of mucous membrane. It yielded in six days to treatment with rhatany ointment.

SURGERY.

RIEDINGER ON INFLAMMATORY SEPARATION OF EPIPHYSES.—Dr. Riedinger, of Würzburg, reports in the *Verhandlungen der Physikal-Medicinische Gesellschaft zu Würzburg*, Bd. x. Hft. i., an interesting case of inflammatory separation and necrosis of the superior epiphysis of the left femur. The author, in some preliminary remarks, states that osteomyelitis, osteochondritis, and cognate processes, attacking young subjects, may have varying results according to the constitution of the patient, the character of the morbid process, and the portion of the bone affected. In subjects who have not reached the period of puberty, the inflammatory process may result in the separation from the shaft of the inflamed bone of one or two epiphyses. In some instances reunion takes place, but usually with more or less irregularity and distortion, and with contraction of the corresponding articulation. In other cases, the reunion of the epiphysis and diaphysis is imperfect, and a kind of false joint is formed. Again, reunion may fail altogether; and then the detached epiphysis, cut off from its nutrient supply, may undergo necrosis, and act as a foreign body. Cases have been recorded, in which the loose epiphysis had contracted adhesion to the shaft through secondary inflammatory action. According to Bardeleben, a necrosed epiphysis may melt down with profuse suppuration, and be entirely eliminated by the discharge in minute fragments through fistulæ. The subject of Dr. Riedinger's report was a badly developed and very anæmic youth, aged seventeen years, who in the summer of 1872 had been suddenly attacked with acute pain in the region of the left hip, and soon afterwards with intense fever and rigors, swell-

ing and redness over the seat of pain, and œdema of the corresponding leg and foot. Seven weeks later an incision made at the upper part of the left thigh had given exit to a quantity of pus. In consequence of the persistence of the suppuration and the consequent debility of the patient, it had been decided to place the case in the Würzburg Hospital, under the care of Professor von Linhart. The left lower extremity had been shortened by about three inches, and rotated inwards. The patient lay constantly on his right side, and there was marked lordosis of the lumbar vertebræ. About the hip were several fistulæ leading down to the joint. The trochanter major was much elevated, and very prominent. The whole of the limb was much emaciated. On probing the seat of disease, carious bone could be made out. The patient could not be made to move the diseased limb on account of pain, and passive movements made after the administration of chloroform were much restricted. The case was diagnosed as one of suppurative coxitis with luxation, although there was some doubt as to the position of the head, which could not be felt. The operation for excision of the hip was performed. The ordinary incision was not made, but a fistulous canal near the antero-superior iliac spine was connected by a stroke of the knife with another canal over the trochanter major. The joint could then be readily reached. A hard, rough, and movable body placed near the acetabulum, having been removed by forceps and examined, was found to be the head of the femur in a state of necrosis, and quite detached just at the seat of the insertion of the neck of the bone and at a part precisely corresponding to the epiphysal line. This necrosed head had remained in the acetabulum, whilst the neck and diaphysis of the bone had been displaced upwards and backwards. As the remaining portions of the joint were found in a healthy condition, no further operative proceedings were taken after removal of the portion of dead bone. The surface of the acetabulum was found covered by a layer of healthy granulation-tissue. The death of the detached epiphysis, in this case, Dr. Riedinger remarks, is not surprising as the ligamentum teres had been destroyed, and all supply of nutrition cut off. Allusion is made to the remarkable difference in the results of inflammatory loosening of the upper femoral epiphysis and of intracapsular fracture of the neck of the bone. In the latter lesion, though the line of fracture may correspond very closely to the former epiphysal line, though the detached head may never again become united with the rest of the bone, and though the age and condition of the patient are very often unfavourable to the preservation of vitality in the small fragment, yet this fragment very rarely undergoes necrosis. This difference in results is attributed to the presence in the former case of the element of active inflammation. The author, in concluding, expresses his doubts whether luxation of the head of the femur is so frequently met with in connection with coxitis as is generally supposed; and he seems inclined to believe that, in many of the cases of supposed complete luxation, the real condition consists in displacement of the neck and shaft from the detached head, which lies either loosely, or fixed by more or less ankylosis, in its acetabulum.

W. JOHNSON SMITH.

DUNNING ON THE DIAGNOSIS OF ANEURISM.—Dr. W. B. Dunning relates the two following cases in the *New York Medical Record* for July, in

illustration of a remark of Dr. Stephen Smith, 'that the symptoms most relied on in the diagnosis of aneurism may be present when there is no aneurism, and may be absent when aneurism exists.'

1. *Aneurism mistaken for Semi-Malignant Tumour.*—A few years ago Dr. Dunning was invited, being then house-surgeon to Bellevue Hospital, to see a case of tumour in the popliteal space, which it was proposed to remove. The patient was an Irish labourer, thirty-two or thirty-three years of age, who had always had good health until two or three years before, when he first noticed a small growth of the size of a walnut in his left popliteal space. He had never received any injury in this region, had never had syphilis, and knew of no cause which could explain its presence. In consequence of its increasing size and its apparent effect on his health and spirits, the patient had been for some months desirous of an operation for its removal. His surgeon, a man of skill and experience, had repeatedly examined the tumour, and, without expressing a positive opinion, save that it was not an aneurism, was inclined to regard it as a sarcoma. When Dr. Dunning saw the patient he was somewhat emaciated, but on the whole all his functions were in a healthy condition. The tumour was then about nine inches in circumference, completely filling the popliteal space, and protruding from it about three inches, spherical, hard, and inelastic, non-adherent to the skin, having no pulsation, uninfluenced in size by pressure on the femoral artery, and having no bruit. It was a tumour in the course of an artery, but presented no other feature whatever of an aneurism. As an *experimentum crucis*, a hypodermic needle was inserted, but its withdrawal was followed by no liquid of any kind. The attempt to operate was attended with the most profuse hæmorrhage, followed in a few hours by death. The tumour was found filled with concentric layers of fibrine occupying its entire space, save a small cavity in the course of the artery. It had no appreciable pulsation nor bruit, because so considerable a mass of fibrine intervened between the artery and the examining finger. It did not diminish in size on pressure of the artery above, because its constituents were almost wholly solid, and this pressure could remove only the liquid portion; and finally, an exploratory puncture brought no blood, because the needle penetrated only into the solid fibrine.

2. *Fatty Tumour mistaken for Aneurism.*—A lady, over eighty years old, who recently died, had had an immense tumour on the right side of the neck, which had been regarded by all who had examined her as an aneurism. It had existed over thirty years, and her friends had been repeatedly warned that it might rupture at any time and the patient bleed to death. At the time of death, this tumour was about thirteen inches in circumference, of an ovoid form, non-adherent to the skin, inelastic, hard to the touch, save at one circular spot an inch in diameter, and had presented three features of an aneurism, viz.: (1) a tumour in the course of an artery; (2) an expansive pulsation felt distinctly by the finger placed on any part of the tumour; and (3) a distinct bruit. The *post mortem* section showed an immense fatty tumour, surrounded by layers of calcareous plates.

EXCEPTIONAL SITUATION OF A POPLITEAL ANEURISM.—In the notes of practice at Bellevue Hospital, in the *New York Medical Record* for

July 29, a case is recorded in which the patient, a labouring man, aged forty-two, had an aneurism of the popliteal artery which, at the time of the operation, four months after the occurrence of the accident which caused it, had increased the circumference of the limb two and a half inches, and the entire limb below its situation was somewhat swollen. The situation of the tumour was quite exceptional, for it was found to overlap only a small part of the outer and lower border of the popliteal space; the chief extent being to the outer aspect of the leg and below the popliteal space. The question arose, was not the tumour a pulsating tumour of the bone? It was believed to be an aneurism, because it was a pulsating tumour—a tumour with thin walls, a tumour that could be reduced in size by pressure upon the tumour itself, and also upon the artery above it, and was a tumour over which a distinct murmur could be heard, synchronous with the first sound of the heart. For its cure the femoral artery was tied, and the patient did well.

PITRES ON THE MODE OF FORMATION AND THE STRUCTURE OF THE CLOTS WHICH DETERMINE HÆMOSTASIS.—M. A. Pitres (*Archives de Physiologie*, May and June, 1876) gives the result of his direct observations of the mechanism of hæmostasis in frogs and young warm-blooded animals. He quotes first the generally received opinion that the clots are formed by the coagulation of blood in the same manner as this takes place in a bleeding cup; he then refers to a paper by J. F. D. Jones ('A Treatise on the Process employed by Nature in Suppressing Hæmorrhage from Divided and Punctured Arteries, and on the Use of the Ligature,' London, 1806) to show that long ago direct observation had proved that this process is not so simple, but that, according to Jones, the thrombus is composed of three layers—one external, red, and resembling ordinary blood-clot; a second, lying in the wound itself, white, and called by Jones the lymphatic clot; and, third, a red internal clot. More recently, M. Zahn (*Virchow's Archiv*, 1874), directly observing by the microscope the process of hæmostasis in the mesentery of the frog, saw that the lymphatic clot of Jones is really formed by the aggregation of leucocytes. M. Pitres, following Zahn, completely confirms his statements, and proves, by washing away the blood as it flows, so as to prevent the formation of external clot, that the essential element in the hæmostatic process is this lymphatic clot, the function of the external clot being only secondary and accessory to the other. The internal clot plays no part in hæmostasis proper; it occurs secondarily, and only when the circulation has been totally interrupted in a vascular *cul-de-sac*, and is the consequence of complex changes in the plasma, the corpuscles, and the walls of the vessel, and not the result of coagulation of the blood by a mechanism analogous to that which outside the body brings about the formation of clot by the solidification of the fibrine.

ROBERT SAUNDEY, M.B.

CRAWFORD ON TRANSVERSE FRACTURE OF THE PATELLA FROM DIRECT VIOLENCE.—Dr. J. H. Crawford, of Wiscasset, Maine, writes (*New York Medical Record*): 'Noticing a case of direct fracture of the patella chronicled in reports of practice of Bellevue Hospital, I would wish to state that I have had a somewhat similar one. Miss J.,

of Metuchen, New Jersey, while stepping from a platform to the railway track, slipped and fell, striking her right knee against the rail. She was conducted home, and when I saw her, the same day, I found transverse fracture of the patella, with considerable displacement. I used a stimulating lotion, and the following day drew the fragments of bone together, retaining them with strips of adhesive plaster, enclosing the whole leg at an oblique angle, and retaining it in this position for six weeks, at the expiration of which time I commenced free motion of joint with satisfactory results. At the expiration of nine weeks the patient, for the first time since the fracture, stood on her leg, and finally had a comparatively perfect union, with free use of the joint as before the fracture.

[Might not the patella have been broken during the fall, and not by the blow against the rail?]

ALLIS ON THE TREATMENT OF FRACTURE NEAR THE ELBOW-JOINT.—Dr. O. H. Allis, in an article in the *Philadelphia Medical and Surgical Reporter* for July 1, disapproves of the use of rectangular splints in the treatment of fractures involving or approximating the elbow-joint. He points out that the humerus and ulna do not lie in the same plane; a line drawn along the inner border of the humerus falls about two inches below the end of the ulna, and the bones join at an angle of about 175°. Hence a straight or rectangular splint applied along the inner side of the arm, in fracture of the humerus just above the condyles, in fracture of either or both condyles, in fracture of the olecranon process, or in the upper third of the ulna, would produce deformity. The defect holds good in all the angular splints, whether anterior or posterior, provided the two arms of the splint lie in the same plane. To have a perfect wooden splint, one should take the angle of the sound limb as his guide in its manufacture. If it be made with a hinge, it can be applied with the arm extended, as in this position one can the more advantageously compare the two limbs. A few strips of adhesive plaster may be sufficient to secure it to the forearm and arm, and then bending the arm to the angle most desirable or convenient, the dressing may be completed and the forearm put in a sling. Such a dressing will not produce deformity, and will permit motion at the proper time, without removing the splint. In the use of the anterior angular splint the thumb should look forward, not upward. Dr. Allis does not know any splint that possesses the combined advantages of the felt splint in injuries of the elbow-joint. By first dipping the felt in hot water it can be made pliable, and thus be moulded and adapted to the natural contour of the limb. It soon hardens, and then becomes a support and protection to the part; a security against displacement. With the felt material it is not a matter of importance whether it be adapted to the anterior, posterior, or lateral aspects of the limb, since it is applied in a soft, yielding condition, and obviously incapable of displacing the parts; while the wooden splint, incapable of accommodating itself to the part, will, with the applied bandage, gradually draw the fractured part to it.

The angle at which nature has joined the bones of the arm is to the labouring man a matter of great practical importance. By taking advantage of this angle, which he instinctively does, he is enabled to rest the internal condyle of the humerus upon the brim of the pelvis, and thus carry a bucket of water

freely from his legs, and that, too, with the least expenditure of muscular force; while with this angle effaced the weight must either be removed from the body by great muscular effort of the deltoid, or offer an almost insuperable obstacle to locomotion.

In his own cases Dr. Allis never uses splints, but always extemporises a dressing. In fracture of the condyles in children, he usually employs adhesive plaster. He cuts the strips about two inches wide and eight or ten inches long, and placing the arm in an easy extended position, he incases the limb from a few inches below the shoulder to the wrist, taking care that each piece overlaps the preceding one. Over this layer of plaster he places another, and about the joint he sometimes adds a few pieces of binders' board, dipped in hot water.

Certain advantages may be ascribed to the dressing of adhesive plaster, especially in children.

1. It sticks to the limb without compressing it.
2. It allows the child to bend its arm slightly, if it desires to do so.
3. By each strip overlapping its fellow, it becomes a complete encasement, at once light, flexible and adherent.

Should a starch dressing be used (or the white of eggs and flour), both of which make an admirable dressing, the same precaution taken in using the adhesive plaster should be followed, viz., to apply it on strips of muslin about two inches wide and eight or ten long, and under no circumstances to employ a continuous bandage.

Having dressed the arm, he directs the parents, if the child have pain, to remove the dressing, or bring it immediately back to him. He always sees the child the second day, and often relieves a little pressure at the wrist, and after a few days, finding that the child does not complain of pain, he pays little more attention to it, until he removes it, in the fourth or fifth week; he has not found a single case where there has been excoriation. In seven cases of fracture of the condyle the arm has been kept extended, and no passive motion employed, during the entire cure, and in only two of the number was the dressing changed once, and this because it had become loose.

His objects in dressing the cases with the arm extended, and without passive motion, leaving them undisturbed during the entire cure, are:—1. To test the danger of ankylosis, which, he is persuaded, is greatly over-estimated; 2. Because in this position he would get the best possible results. In this respect, he says, he has secured all one could wish; he has seven cases of fracture of the condyle in which it would require careful examination to tell which arm had been injured.

RECENT PAPERS.

On Cheloidal Tumours. By Dr. Cartaz. (*Le Progrès Médical*, Sept. 1, 1876.)

Is the Abandonment of Blood-letting a Real Step in Advance? By Dr. Trastour. (*Bulletin Générale de Thérapeutique*, Sept. 15.)

On Preventive Trephining in Fractures, with Displacement of Splinters of the Inner Table of the Cranium. By M. C. Sédillot. (*Gazette Médicale de Paris*, Sept. 23.)

On Medico-Tarsian Sprain. By Dr. Terrillon. (*La France Médicale*, Sept. 30.)

Clinical Studies on Reduction in Mass and Hernias with an Internal Sac. By Dr. Bourguet. (*Archives Générales de Médecine*, Oct. 1876.)

On Digital Compression and Flexion applied to the Treatment of Aneurism. By George Fischer. (*Ibid.*)

On the Preservation of the Suborbital Nerve in the Resection

of the Superior Maxillary Bone. By M. E. Letiévant. (*Gazette Hebdomadaire*, Sept. 29.)

Catheterism and Mechanical Dilatation in Narrowing of the Larynx. By Dr. C. Labus. (*Annali Universale di Medicina*, August.)

A Case of Traumatic Tetanus treated by Hydrate of Chloral and Jaborandi. By Dr. Ferrini. (*Ibid.*)

Two Cases of Reduction of Hernia *en masse*. By Dr. Turati. (*Ibid.*)

Esthomene of the Vulva. By Dr. Sirédey. (*L'Union Médicale*, Oct. 3.)

Compound Fracture of the Patella. By Dr. M'Diarmid. (*Edinburgh Medical Journal*, Oct. 1876.)

Case of Transverse Fracture of the Patella. By Dr. W. T. Grant. (*Ibid.*)

On the Method of Operating for Vesico-Vaginal Fistula. By Dr. Trenholme. (*Obstetrical Journal*, Oct. 1876.)

MATERIA MEDICA AND THERAPEUTICS.

ROSENSTIRN ON THE LOCAL ACTION OF THE SO-CALLED ASTRINGENTS ON THE BLOOD-VESSELS. H. Rosenstirn (*Wüzburg. Phys. Med. Verhandlungen*, ix. p. 32, and *Centralblatt für die Medicin. Wissenschaften*, no. 35), tested solutions of nitrate of silver, acetate of lead, tannic, gallic, and pyrogallic acids, sesquichloride of iron, and alum, by placing them upon the mesentery of a curarised frog, and estimating the size of the lumen of the affected vessel by means of the microscope. Nitrate of silver acted most powerfully on the vessels; it was employed in solution from 1 to 10 per cent. The observation was often interfered with by the turbidity produced in the tissues. The contraction extended to about half the lumen of both arteries and veins, and in a much less degree in the capillaries. The reaction occurred within a few seconds. Stagnation generally took place in the vessels; permanent in the capillaries, and temporary in the arteries and veins. Tannic acid had exactly the opposite effect. Under its influence the arteries dilate, even the veins and capillaries to the extent of one-half of their lumen, and appear to be over-filled with blood-corpuscles. The dilated vessels become narrowed at once by the action of nitrate of silver. Gallic and pyrogallic acids have an action similar to tannic acid. Acetate of lead acts more feebly than nitrate of silver. It narrows the arteries and veins, but no effect was observed on the capillaries. Sometimes also standstill of the circulation occurs. A 10 per cent. solution of sesquichloride of iron had no effect; in a 50 per cent. solution it narrowed the vessels less than acetate of lead. This narrowing is limited to the arteries and veins, while the capillaries dilate. Coagulation and discoloration of the blood within the vessels often occur. The results of the alum solution were variable.

In order to exclude a reflex action, the spinal cord was destroyed and the heart ligatured.

The author therefore ascribes an astringent effect, i.e. contraction of the vessels, only to nitrate of silver and acetate of lead; whilst this action is doubtful for alum and solution of sesquichloride of iron, and is certainly not the case with the group to which tannic acid belongs.

ROSSBACH ON THE PHYSIOLOGICAL ACTION OF COLCHICIN.—J. Rossbach (*Pflüger's Archiv*, Band xii.), remarks that the most striking phenomenon produced by this drug is the complete loss of sensibility by paralysis of the peripheral and the central

nerve terminations. The reflex excitability is extinguished. The motor nerves and the muscles preserve their excitability till death. In many animals the paralysis is preceded by a stage of excitation, which in frogs may proceed to a spasmodic attack. The circulation of the blood is only slightly affected by the poison. The heart continues to beat even after the appearance of the paralysis of the central nervous system. The blood-pressure remains long unchanged, and sinks only at death, and the paralysis of the inhibitory cardiac nerves also occurs late. The respirations gradually become less frequent, until complete standstill occurs, so that one must conclude that the respiratory centre is paralysed. In warm-blooded animals, and especially in cats poisoned with this drug, the whole gastric and intestinal mucous membrane was swollen and strongly injected, and bloody mucus was found in the intestine. As a consequence of this, during life, there was diarrhoea, vomiting, and colic-like pain. The cause of the strong injection of the vessels was not determined. The fibres of the splanchnic and abdominal vagus were not paralysed. The kidneys were also strongly hyperæmic and their secretion diminished.

The action of colchicin occurs very slowly, and death only takes place after several hours. It is remarkable, as Schroff had already indicated, that the amount of the dose has no important influence either on the intensity or on the rapidity of the poisoning. A few centigrammes, in cats several milligrammes, suffice to produce death, which occurs through stoppage of the respiration, the heart still continuing to beat. In this stage tonic or clonic spasms sometimes occurred in rabbits and cats. These the author regards as the spasms of asphyxia. Doses smaller than are lethal have no effect.

The author, therefore, does not regard colchicin as a therapeutic agent of much value. It may be used as a local anæsthetic, and Gerhardt uses it as such, for application to the mucous membrane of the pharynx and larynx.

W. STIRLING, D.Sc., M.D.

OTT ON COCA AND ITS ALKALOID COCAIN.—Dr. Isaac Ott, of Pennsylvania, in the *New York Medical Record*, September 9, 1876, gives an account of an experiment made upon himself with coca, and the results of other researches with that substance and its alkaloid on man and lower animals. After chewing 60 grammes of coca leaves in the space of eight hours and forty-five minutes, Dr. Ott describes his condition as follows: 'Loquacity; eyes brilliant and moist; at length speech becomes thick; am in high spirits and full of hopes. In ten hours and fifteen minutes frontal headache again coming on; drowsiness; then retire, but unable to sleep. After a few hours deep sleep comes on, but is disturbed and not prolonged. Arise at 7.30 A.M.; face pale; eyes seem dry; lips bluish; take a light breakfast without coffee. Since 10.30 P.M. last night have had frontal pain; sensation in mouth still blunted. At dinner took three cups of coffee, which relieved me, but headache came on during the afternoon; taste blunted during the whole day.'

Dr. Ott finds that in man coca increases the pulse, elevates the temperature, dilates the pupil, and decreases the amount of water used and chloride of sodium excreted by the kidneys. Observations made with cocaine on the lower animals gave the following results. In small and large doses it causes

loss of co-ordination and decrease of motor power; it does not paralyse the anterior columns of the spinal cord. In small doses it increases the sensibility, which causes general convulsions upon irritation. Large doses abolish the functions of the posterior columns and sensory nerves. When gradually introduced into the system, it kills by stoppage of respiration. It reduces the pulse and arterial tension momentarily, and afterwards increases them. This effect is a result of an action on the heart and vaso-motor centre. It does not paralyse either the pneumo-gastrics or the vaso-motor centre, situated in the brain. It first excites and then paralyzes the centres of respiration. The pupil is dilated and the temperature, after a depression, rises. On striated muscles the course of contraction, as registered by Marey's comparative myograph, is similar to that with veratria. If coca and cocaine be compared with coffee and caffeine, in their physiological action, the result will be that they are very similar, and that coca and its alkaloid should be classed among the excitants, of which coffee is the chief example.

FRIGERIO ON THE TREATMENT OF EPILEPSY BY SUBCUTANEOUS INJECTION OF BROMIDE OF POTASSIUM.—In the May number of the *Archivio Italiano per le Malattie Nervose* (quoted in *Paris Médical*, August 31), Dr. Luigi Frigerio gives the results which he has obtained by this proceeding. At first he employed by preference a solution containing 2 centigrammes ($\frac{1}{3}$ grain) to the gramme; he has given as much as 60 centigrammes ($8\frac{1}{2}$ grains) at each injection, but this dose causes local trouble; he has even seen an injection of 25 centigrammes ($3\frac{1}{2}$ grains) cause abscesses and eschars. He chooses the skin of the fore-arm. He has remarked that by gently rubbing the point at which the puncture is made, the absorption of the injected matter is facilitated and the chances of abscess avoided. It is useful also to prescribe repose of the limb, and Dr. Frigerio also often puts the patient to bed. He has observed a rapid diminution in the number of attacks. The local effects are less frequent, and relatively slight.

MURRAY ON DAMIANA.—The *New York Medical Record* for August 19, 1876, contains an article by Dr. Alexander Murray, of New York, on the new remedy damiana, the therapeutic value of which he has tested in nervous diseases, and especially as an aphrodisiac; particulars of five cases are given, and the following are the concluding portions of the paper.

'I have noticed that, when damiana had been taken for a week or two, it invariably produced (in about two-thirds of my patients) an eruption of acne on the head and body. It also produced large soft evacuations from the bowels, especially in those of a constipated habit. The drug did not act as a laxative, but more as an alterative; in fact somewhat similar in its results to the extract of belladonna, when administered in chronic constipation. I did not observe any marked effect on the heart, liver, stomach or bladder. In a few instances I noticed the diminution of the phosphates, and almost the entire absence of the oxalate of lime, which usually appears in the urinary secretion in cases of nervous affections, and especially in cases of impotency.'

'The value of damiana in impotency is more apparent in stimulating venereal desire than in restoring the vigour or power of the virile member. In

several cases the drug failed to manifest any curative effect, while in others, particularly in those arising from an attack of paralysis (hemiplegia), even of six or eight years standing, it was more or less beneficial.

'Damiana is by no means an agreeable remedy to take. The bitter slightly acrid taste, and the "sagey" flavour are disliked by many patients. It sometimes excites nausea or vomiting, especially when taken on an empty stomach, or when the dose is not largely diluted with some menstruum.

'The fluid preparations of damiana, when mixed with water, act somewhat similar to the tincture of guaiacum—that is, by forming an opaque mixture or emulsion of a dirty greenish-white colour. A combination with a little liquor potassæ or water of ammonia forms a tolerably clear solution when diluted with water. The tincture of the chloride of iron changes the fluid extract to a dark bluish-green colour.

'Generally I prescribe the fluid extract of damiana in combination with equal parts of glycerine and syrup of tolu, or with some fruit syrup. Several of my patients have taken the drug in claret, Rhine wine, or lager-beer, to disguise its taste, while others prefer the cold fresh infusion. Frequently I have prescribed, as an adjunct, dilute phosphoric acid, from 10 to 15 drops with each dose of damiana. This addition renders it pleasant and easy to take.

'The following is the formula of the infusion which I have employed. Damiana leaves and flowers, two ounces; liquorice-root bruised, $\frac{3}{4}$ ounce; boiling water, sixteen ounces. Macerate for eight hours in a covered vessel, and strain. Dose: two to four ounces.'

VALENTI Y VIVO ON THE ANTAGONISM BETWEEN BROMIDE OF CAMPHOR AND STRYCHNINE.—Dr. Valenti y Vivo publishes in the *Siglo Medico* (quoted in *Paris Médical*, August 31, 1876), the conclusion of researches which he has made on this subject. Twelve dogs were poisoned by strychnine; some were saved by monobromide of camphor. The tetanic convulsions produced by the strychnine diminished in force and frequency under the bromide. The tonic convulsions became clonic, but a large dose of the bromide of camphor was necessary to combat the effects of the strychnine.

With an excessive dose of bromide, the united effects of the poison and the antidote produce death by syncope. The bromide acts on the great sympathetic, dilating the pupil and paralysing the heart. When death supervenes under the influence of the strychnine alone, the heart continues to beat after death, but when death is due to the bromide, no *post mortem* beatings of the heart are observed.

It is preferable to administer the bromide by the stomach in small and repeated doses; indeed, by hypodermic injection no result has been obtained.

DESCHAMPS ON THE TREATMENT OF ACUTE ARTICULAR RHEUMATISM BY CYANIDE OF ZINC.—M. Deschamps of Liège has brought before the Medico-Chirurgical Society of that city the results which he has obtained in the treatment of acute articular rheumatism by cyanide of zinc (*Paris Médical*, September 7, 1876). In nine cases he administered the cyanide of zinc without ever increasing the dose beyond five centigrammes (0.77 grain) a day, in the following form: R. Cyanide of zinc, five milligrammes (0.077 grain); gum arabic and sugar of milk, of each, nine centigrammes (1.35 grains);

make one granule. Two to five granules a day, progressively.

M. Deschamps gives an account of these nine cases, and adds the following remarks. We must agree, if we abide by the preceding observations, that cyanide of zinc in small doses is a very valuable agent in acute articular rheumatism; under its influence, the pulse rapidly fell, sometimes to an inexplicable degree; the pains were rapidly diminished, but the temperature did not immediately come under this favourable influence. We also remarked that on the second or third day there was always an increase in the temperature, although the pulse maintained its ordinary rate or even fell below it.

These different effects of the cyanides, retardation of the pulse, lessening of the pain, and downfall of the temperature, have long been remarked: we can only conclude, then, that these observations have confirmed them by applying to acute articular rheumatism the physiological and therapeutic effects of cyanide of zinc.

Let us add that other reasons are in favour of this cyanide salt; its administration is easy, its elimination rapid, perhaps even cardiac complications are less frequent; we have, indeed, only had one well-marked case of endocarditis in the nine observations which have been recorded.

W. DOUGLAS HEMMING.

DUMAS ON ERUPTIONS PRODUCED BY QUININE.—In the *Journal de Thérapeutique*, no. 8, 1876, Dumas relates the case of a woman suffering from facial neuralgia, who, after having taken only 30 centigrammes ($4\frac{1}{2}$ grains) of sulphate of quinine, was seized with a paroxysm of asthma, coryza, fever, and violent itchiness over the whole surface of the body, accompanied by an eruption of urticaria, and further by a peculiar eruption formed by red spots like a scarlatina rash, and on some parts by papules. On four different occasions the patient suffered from the same symptoms after taking quinine.

G. THIN, M.D.

NICKLES ON THE ANTIPYRETIC USE OF QUININE.—In a paper read before a Cincinnati Society, the author gives a good *résumé* of our knowledge regarding the employment of quinine in large doses. He quotes Liebermeister as saying that he had given quinine in large doses in more than 1,500 cases of typhoid fever, and, besides, in hundreds of cases of pneumonia and other febrile affections, so that the number of single doses, varying from one scruple to forty-five grains, amounted to about 10,000. And not in a single case did he see permanent evil effects result, which could be ascribed to the action of the quinine.

NEAVE ON THE PREVENTION OF PITTING IN VARIOLA.—Although Dr. Neave does not allege that by any method of treatment 'pitting' can be certainly or entirely prevented, he has found that painting the face with tincture of iodine immediately upon the appearance of the eruption seems to have the effect of aborting the eruption to a great extent, many of the pocks never passing beyond the papular stage. His opportunities enabled him to experiment with a number of measures, and he found that carbolic acid and glycerine (gr. xv. to 3j.) rather increased the trouble and irritation. Carbolic acid with simple ointment was also a failure. Collodion caused intolerable itching and destructive scratching. Carbolic acid with linseed

oil (3ss. to ʒiv.) lessened the itching, but not the scarring. The experiment of painting one side of the face with collodion and the other with iodine resulted in favour of the latter in every way.

LEARY ON EUCALYPTUS GLOBULUS AS A DIURETIC IN DROPSIES.—Dr. J. B. Leary reports four cases in which the use of fluid extract of eucalyptus globulus, in doses of eight to ten minims as a diuretic, resulted most favourably. While patients have been taking it, they sometimes complained of a very severe congestive headache, accompanied with tinnitus aurium; their appetites were much better; though no tonics were prescribed, and in some cases the faecal movements were more fluid than usual.

LYLE ON SASSAFRAS AS AN ANTIDOTE TO VEGETABLE POISON.—The Cincinnati *Lancet and Observer*, for April, has a paper by Dr. A. W. T. Lyle, of Castleton, Indiana, in which attention is called to the statement by Dr. Thompson, of Nashville, concerning the antagonistic properties of sassafras to henbane and tobacco. Dr. Lyle mentions the case of a child four years old who had eaten stramonium flowers, and showed symptoms of poisoning. After the administration of emetics ten drops of oil of sassafras were given every half hour until six doses had been taken, when consciousness returned, and, after taking a dose of castor-oil, the child was playing the next day, and free from all pains or disturbances following poisoning.

LANGELL'S SECRET REMEDY FOR ASTHMA.—A writer in the *Peninsular Journal of Medicine* says an analysis of 'Langell's Asthma Remedy' shows that it is a mixture of ten or twelve parts of coarsely powdered belladonna leaves with one part of nitrate of potassium dried together. The packages contained about two ounces, and were priced at 1.25 dollars each. On igniting a portion on a plate, combustion takes place slowly, and the fumes are inhaled. It is said to give prompt relief, is much asked for, and can be sold in quantities for about half a dollar a pound.

THE RELATIVE VALUES OF CINCHONIDIA AND QUINIA.—In the July number of *New Remedies*, it is mentioned that the Medical Board of Bellevue Hospital, New York, had caused experiments to be instituted as to the relative merits of sulphates of quinia and cinchonidia. The latter salt was used, almost exclusively, for over a month in that institution. At the last meeting of the board, the various members on duty reported their experiences, and they seemed to be in the main tolerably agreeing with one another. The surgical members of the board declared cinchonidia to be a valuable tonic and antifebrile remedy, but found it to be totally inadmissible in severe surgical injuries, especially to the genito-urinary system, and in cases of shock, where it is apt to produce emesis, and in consequence thereof, or rather in connection therewith, severe congestive symptoms. In such cases cinchonidia had to be entirely abandoned, and quinia had to be resorted to. In purely medical affections, however, as in intermittents of all stages, pneumonia, etc., it was found to act with great promptness, although not quite so rapidly as quinia, and requiring a somewhat larger dose. Whenever the tonic effects of cinchona are desired to be produced, cinchonidia can with perfect reliability be substituted for quinia, and

the attention of physicians is especially directed to this fact, as it enables them to administer to patients in indigent circumstances a prompt and effective remedy at a considerably reduced expense. Hospitals and dispensaries, supported by public or private charity, will also do well to instruct their prescribing staffs to properly discriminate between cases which may be benefited by the dearer or the cheaper alkaloid. It will make a considerable difference in their annual expenditure.

RECENT PAPERS.

Treatment of Strictures of the Larynx and Trachea by Dilatation. By Dr. Thacon. (*Le Progrès Médical*, Sept. 16.)
The Poisons of Maize and their Applications to Hygiene and Therapeutics. By Dr. C. Lombroso. (*Lo Sperimentale*, Sept. 1876.)

PSYCHOLOGY.

BEARD ON THE NATURE AND PHENOMENA OF TRANCE.—In the *Archives of Electrology and Neurology* for May 1876 (quoted in the *Detroit Review of Medicine* for July), is given a careful and able study of trance. He describes trance as a passive state, conscious or unconscious, either physiological or pathological, in which the mind passes from the control of the will, and in the milder and conscious state acts through the senses in obedience to some prominent idea or external suggestion, with various mental and physical manifestations, and in the rarer and most advanced stages goes on to protracted suspension of the active vital functions.

Trance differs from sleep in the following general features. 1. The trance subject acts out his dream, while in sleep the dream does not cause any corresponding physical phenomena. 2. The performances of the trance are logical, coherent and consistent, while dreams are filled with extravagance and absurdities, which to the sleeper seem entirely proper. 3. In trance some of the senses are perfectly sealed. The loudest noises are not heard, the most fragrant odours are not observed, and there is no power of taste. Other senses may be unduly exalted. On the other hand, the soundest sleepers are awakened by loud noises or by sufficiently irritating the sensitive nerves. 4. Trance subjects are capable of responding to suggestions offered by a second party, or from any external source, and become consciously obedient to those suggestions. Sleepers present no such peculiarity. 5. In some forms of trance there may be double or divided consciousness. The subject, on coming out of the trance, has no recollection of his experience while in it. On again entering the trance, he resumes the experience of the previous attack where it left off, as though no active life had intervened. In sleep there is no such continuity of existence from one nap to another.

The symptoms of trance are these: 1. Closing of the eyes and fixity of position, with gradual loss of volitional power. 2. Flushing of the face and eyes, with sensible and cold perspiration, and coldness of extremities. 3. Sighing respiration and rapid pulse, with evidences of oppression and pain. 4. Mild or violent involuntary muscular motions. 5. Involuntary mental action, with exaltation or depression of the senses, and of the mental and muscular powers. 6. Illusions and hallucinations of various kinds. 7.

Various hysterical symptoms. 8. Profound sleep, with protracted suspension or diminution of active vital functions. He classifies trance as: (1) spontaneous; (2) self-induced; (3) emotional; (4) intellectual. Of the therapeutic uses of trances, he says they are not recommended as a regular procedure in important cases.

RECENT PAPERS.

On the Function of Psychology in the Question of Insanity. By Dr. Despine. (*Annales Médico-Psychologiques*, Sept. 1876.)

Nightmare and Dreaming. By J. M. Winn, M.D. (*Journal of Psychological Medicine*, Oct. 1876.)

The Localisation of the Functions of the Brain. By Dr. J. G. Davey. (*Ibid.*)

TOXICOLOGY.

POST ON POISONING BY CYANIDE OF POTASSIUM.—Dr. J. A. Post of Rochester, New York, relates in the *New York Medical Journal* for April, the case of Mr. R., aged forty-five, to whom he was called on January 31. He was labouring under symptoms of congestion of the brain, and died in about half an hour after being seen. He was a jeweller, and was in the habit of using cyanide of potassium and gold with an alloy. The vapour of the cyanide of potassium, he said, always produced in him the symptoms of brain-congestion. *Post mortem* examination, at 3 P.M., on February 1, showed the dura mater and arachnoid to be greatly congested. The pia mater was to all appearance perfectly normal, except an oval spot about an inch long by three-quarters of an inch wide, situated about one inch and a half above the internal occipital protuberance and one inch to the left. The internal surface of this spot throughout its whole extent was firmly connected to the surface of the brain, presenting the appearance of old inflammatory action. It did not penetrate the brain-substance, neither was it connected externally with the arachnoid. The arachnoid and dura mater immediately covering did not present evidence of any inflammatory action. This connecting substance presented the appearance of fibrous adhesions, and, when dissected, was found to be tough and to cut like cartilage. While dissecting this connecting link, the knife struck a spiculum of bone nearly half an inch in length, and about the size of a medium pin-point; this particle of bone was firmly pressed upon the brain, but did not penetrate the brain-substance. There was no serum or blood in the ventricles. The cerebrum was slightly congested, but the substance presented nothing abnormal. The cerebellum was very much congested, and quite soft. The contents of the chest and abdomen presented nothing indicative of disease. The various organs throughout the entire body appeared to be in perfect health. The case is a particularly interesting one on account of, 1. The action of the vapour of cyanide of potassium producing congestion and probably death; 2. The adhesion of the pia mater to the surface of the brain; 3. The spiculum of bone, which had undoubtedly been in that position for many years without producing cerebral troubles.

HJELT ON THE POST MORTEM APPEARANCES IN A CASE OF POISONING BY NITRIC ACID.—In the case of a woman, who died five hours after taking nitric acid, Dr. Hjelt (*Finska läkaresällskapet*

handl., Band xvii., and *Nordiskt Medicin. Arkiv*, Band viii.) found the following appearances. [The quantity and strength of the poison taken, and the symptoms during life, are not stated in the abstract.]

Both lips were of a brown yellow colour, and the epidermis was dry and desquamating. Below the lower lip were some small brownish irregular spots. Within the air-passage, below the vocal cords, were small dark red, blood-stained patches. On section of the lungs, a distinct odour of nitric acid was perceived. The mucous membrane of the mouth had a dirty grey appearance. The tongue was contracted; its surface was yellow grey; the papillæ at the base projected much; the epiglottis was swollen. In the fauces and upper part of the œsophagus the mucous membrane was turbid, thickened, and of a grey green-yellow colour, which extended downwards. The exterior of the lower part of the œsophagus was strongly injected. The stomach was contracted to the size of a large fist; its fundus was dilated. The mucous membrane throughout its whole extent was raised into broad ridges about two lines in depth, of yellow green appearance; between these were larger or smaller patches with a dark brown base, where the mucous membrane was totally destroyed. The remaining mucous membrane could be easily separated from the muscular coat, in the form of a greenish yellow, here and there reddish-brown, finely granular and very friable mass. This destruction of the mucous membrane was mostly found at the fundus. Near the lesser curvature, on the posterior wall, at the bottom of a portion deprived of mucous membrane was an oval opening about half a centimètre (one-fifth of an inch) wide, the edges of which were sharply defined internally, but uneven and swollen externally. The mucous membrane presented the above-named appearances as far as the pylorus, where also was found a smaller patch where the membrane was totally destroyed. In the stomach was a small quantity of yellowish-green fluid, containing solid particles: on testing, it gave the reaction of nitric acid. The mucous membrane of the duodenum presented the same appearance as the stomach for about three centimètres; the remaining portion was injected. The mucous membrane of the small intestine was full. The kidneys were firm; the cortical substance was dark red and injected; the glomeruli were filled with blood; the pyramids were streaky; the pelvis of the kidneys were injected. The blood was fluid, and had an acid reaction.

A. HENRY, M.D.

OBSTETRICS AND GYNÆCOLOGY.

TINKER ON A CASE OF EXTRA-UTERINE PREGNANCY.—The *Boston Medical and Surgical Journal* for May 18, contains the report, by Dr. Martin A. Tinker, of Brooklyn, of a case of extra-uterine pregnancy, in which portions of the fœtus were discharged *per rectum*.

The subject was a woman born in 1840, and married in 1859. She became pregnant in 1870. In May, 1873, Dr. Tinker first saw her. She was very weak, from a long-continued uterine discharge, which disappeared under treatment in about two weeks, while her strength only partially returned, with a very fair appetite. About two weeks after the uterine discharge had disappeared, a moderate diarrhœa supervened, which gradually increased,

while it became peculiarly offensive. All symptoms became aggravated quite regularly about every four weeks, and then would mostly subside during the interval. When on her feet for some time, or walking any considerable distance, her feet and ankles would become cedematous.

On July 13, 1873, while at stool, she perceived some large foreign body passing from her *per anum*; this was the left lower extremity of a full-grown foetus, firmly adherent to its ossa innominata by its ligaments, while the flesh was decomposed and gone from the ossa innominata, and from the knee downwards. From the hip to the knee the skin and flesh were *in situ*. Several other pieces of bones, etc., had been previously passed.

On making an examination *per vaginam*, Dr. Tinker found the parts healthy, the uterus pressed downwards and forwards somewhat, with a little anteversion, and not much larger than the virgin uterus. The os retained its relative position, but was slightly tilted backwards. The bladder was pressed forward, and the head of a full-grown foetus was felt posteriorly, resting upon the fundus of the uterus. On examination *per anum* he found a vertex presentation of the head, rather posterior to the fundus of the womb and above the recto-vaginal sulcus, and four or five inches above the anus there was an opening into the abdominal cavity about three inches in diameter, through which portions of the foetus could be distinctly felt.

No unusual symptoms occurred at this time, and the patient could walk about with very little inconvenience. As the head slowly descended into the recto-vaginal sulcus, the cedema increased, dysuria occurred, and reflex irritation of the stomach induced vomiting, which continued to the last.

The case progressed slowly, the head gradually settling down into the recto-vaginal sulcus, posteriorly to the uterus, pressing upon the rectum, and gradually filling the curve of the sacrum. At length, very painful hæmorrhoids were developed.

About the middle of October a large amount of decomposed matter had collected in the sulcus, below the head, which gradually ulcerated through into the rectum, near the anus, which opening continued to enlarge to the last. Through this opening the cranial bones could be distinctly felt overlapping each other.

On January 20, 1874, a large number of cranial and other bones, having become loosened, were removed with the aid of a small bullet-forceps, with much relief. Early in February the entire occipital, one parietal, and several other pieces were removed in the same manner, and an unusually large amount of decomposed matter passed immediately afterwards. The patient expressed herself as greatly relieved, and on the following day passed urine easily and retained food on her stomach.

After about one week the old symptoms gradually returned, and in a day or two increased rapidly, while the remaining portions did not settle down within reach as the others had done. On February 11, while at stool, and voiding a large quantity of decomposed matter, she fainted. She rallied in a few minutes, after which Dr. Tinker made a careful examination *per anum*, and found the remaining portions quite low, though not in the rectum, but mostly behind the uterus, and in the sulcus. No attempt could now be made to remove them. As she had passed no urine for twenty-four hours, the catheter was introduced, and the bladder found

empty. She gradually sank, and died on the same day.

At the necropsy, on examining the rectum, an opening was found in front, from two and a-half to three inches in diameter, about five inches above the anus, and another, somewhat larger, at the extreme lower portion near the anus. In seeking for this lower opening, the remaining portions of the fetal bones, etc., were removed, forming a mass about the size of a man's fist, which were retained in this position by the ureters, both of which were bared, and in front of the mass. Nothing morbid was found in the liver, spleen, kidneys, stomach, lungs, and other organs examined.

ERCOLANI ON SYPHILITIC DISEASE OF THE PLACENTA.—In the *Annales de Tocologie* (July 1876) Professor Ercolani describes a portion of the membranes of a syphilitic ovum of three months. It had the thickening usual at the epoch when the placenta is about to be formed; from its internal surfaces hung seven round excrescences, varying in size from a grain of maize to a cherry. Under the microscope they were seen to be formed of a network of vessels, supported by a yellow fibrous tissue. On vertical section it was seen that the yellow colour was superficial, and that the deeper stratum was red from vascularisation. The diversity of colour depended on the vascularisation; in the red portions the vessels were hollow, and the blood circulated freely; in the decolourised periphery the vessels were obliterated by proliferation of the internal vascular epithelium.

BROCA ON A SACRO-COCCYGEAN FETAL TUMOUR.—In the *Annales de Tocologie*, for July, M. Broca reports a case of a congenital tumour in the sacro-coccygean region of a girl, aged fifteen, in which bone could be felt. It was recognised as a fetal tumour, and was removed. M. Broca carefully dissected the growth away, and found it to be nourished by a continuation of the sacra media artery, which was tied. The tumour consisted of several small cysts, containing the following distinct anatomical elements: mucous tissue with ciliary epithelium, bone, cartilage, connective tissue, and muscle; no nervous tissue appeared. This abnormality, M. Broca remarks, comes under Geoffroy Saint-Hilaire's class of double endocymian monsters.

FANCOURT BARNES, M.B.

LEALE ON FATTY DEGENERATION OF THE PLACENTA AS A CAUSE OF DEATH IN THE FETUS.—At a meeting of the New York Academy of Medicine, (*New York Medical Record*, June 17.) Dr. C. A. Leale read a paper upon the above subject. Fatty degeneration was regarded as the result of a defect, and not disease of the nutrient process. Such defect might be developed in connection with syphilis, phthisis pulmonalis, scrofula, apoplexy, and other conditions, and give rise secondarily to fatty degeneration.

In a case, of which the history was given, premature labour had been advised by Dr. Fordyce Barker as a measure to be adopted for securing the delivery of a living child; and the symptoms of alarming prostration on the part of the mother, together with the feebleness of the fetal heart, were the indications which decided the time when Dr. Leale should execute the plan recommended. The child was exceedingly feeble when born, but its life was saved by dint of perseverance in the most careful and tender nursing. The placenta was found so far advanced

in fatty degeneration as to be more than two-thirds useless, there being no doubt in this instance that the life of the child would have been sacrificed if it had been permitted to go the full term of uterogestation. The conclusions arrived at were mainly as follows.

Fatty degeneration of the placenta was the cause of death in the fœtus more commonly than was generally supposed; its access might be insidious and its progress slow.

The causes were uterine and ovarine anomalies, insufficient vitality of the ovule, disease of the ovule, insufficient vital force in sperm, disease of sperm, emotional causes, or shock causing paralysis or incomplete detachment of placenta, etc.

The varieties were tuberculous calcareous degeneration with fibrinous deposits, anæmia with atrophy, simple fatty degeneration, degeneration from apoplexy, scrofula, syphilis, and waxy degeneration associated with leucocythæmia.

As a measure for securing the delivery of a living child in cases in which fatty degeneration of the placenta was suspected, and constitutional treatment had failed or was not indicated, where the life of the mother or the child was endangered by delay, Dr. Leale recommended the induction of premature labour at about the thirty-sixth week of uterogestation, in accordance with the suggestion made by Dr. Barker in the case to which allusion had been made.

ADAMS ON A CASE OF RUPTURE OF THE SYMPHYSIS PUBIS DURING LABOUR.—Dr. Z. B. Adams reports a case of this accident in the *Boston Medical and Surgical Journal* for July 6. The patient was a primipara, medium sized, well formed, forty-two years old. The liquor amnii escaped twenty-four hours before labour began. The head was for several hours fixed in the brim. The os was rigid, undilated. The presentation was vertex, in the second position. The bladder was emptied, and the forceps applied. Expulsive pains were strong; and traction upon instruments in the direction of the axis of the brim being made at same time, the symphysis pubis gave way with a loud crack. The forceps did not break, nor slip, nor twist. Labour was rapidly completed. Four weeks after the accident, on examination under ether, complete separation of the symphysis was found; a space of two inches between the ragged edge of the bone upon the right side and the torn ligament and fibro-cartilage of the left, with laceration of the anterior wall of the bladder, and rent into the vestibule. The urethra, entire, was very large, admitting one finger readily. The posterior wall, fundus, and base of the bladder were uninjured. The vagina was everywhere whole, although its rectal surface showed irritation from dribbling urine. The os uteri, rather high up, was healthy in feeling, and the sound passed into the fundus uteri two and one half to three inches without the slightest difficulty or appearance of uneasiness. The brim of the pelvis and the promontory of the sacrum, carefully examined, showed nothing abnormal.

RECENT PAPERS.

- On the Prophylactic Treatment of Purpural Eclampsia. By Dr. Cersoy. (*Bulletin Général de Thérapeutique*, Sept. 15.)
Two Cases of Ablation of the Inverted Uterus by the Elastic Ligature. By M. Courty. (*Annales de Gynécologie*, Sept. 1876.)
A Contribution to the History of Intra-Uterine Fibroids. By Dr. Boissarie. (*Ibid.*)

- Contribution to the History and Treatment of Fissures of the Breast. By Dr. Diberder. (*Ibid.*)
On the Development of the Genito-Urinary Organs. By M. G. Pouchet. (*Ibid.*)
On the Prophylactic Treatment of Eclampsia. By Dr. Cersoy. (*Bulletin Général de Thérapeutique*, Sept. 15.)
Treatment of Uterine Hæmorrhage connected with faulty Insertion of the Placenta. By Dr. Bailly. (*Ibid.* Sept. 30, 1876.)
On a Triplet Birth. By Dr. G. Linoli. (*Lo Sperimentale*, Sept.)

DERMATOLOGY.

FOOT ON A CASE OF SCLERODERMA.—Dr. A. W. Foot (*Dublin Journal of Medical Science*, July, 1876) describes an interesting and typical case of scleroderma, in which the contraction of the skin of the face was greatly marked. The integument became much more pliable after diligent inunction with cod-liver oil.

AUBERT ON HERPES TONSURANS IN PATIENTS UNDER TREATMENT FOR FAVUS.—Aubert (*Lyon Médical*, no. 35, 1876), has twice observed black points like comedones persisting after the appearances of favus had yielded to treatment. They were shown by the microscope to consist of hairs affected by spores. When inoculated on the arm of a healthy man, hairs infiltrated with spores were found after thirty-seven days, but there were no favus-crusts. Three inoculations on rats failed, favus being readily inoculable on these animals. Hence Aubert concludes that the hairs were affected with the spores of herpes tonsurans independently of the favus, and calls attention to the dark points in a diagnostic point of view.

KOLACZEK ON CIRCUMSCRIBED ATROPHY OF THE SKIN.—Erasmus Wilson has recorded two cases of skin atrophy in the upper part of the face and forehead, and has termed the affection atrophía neurotica. In one case the cause was a blow on the forehead, and a white line over the supraorbital nerve was after several years followed by depression and anæsthesia; in the other, a similar atrophy followed violent sneezing. Dr. Kolaczek (*Deutsche Medicinische Wochenschrift*, no. 32, 1876) observed a similar case in a girl, aged twenty. She fell against the corner of a stove when eleven years old. After two years, a yellow spot was observed on the right side of the forehead, close to the middle line. This spread upwards and downwards, and eventually the skin became thin, wrinkled, and somewhat shining. Not only the skin, but the subjacent bone was partially atrophied. Sensation was diminished over the part. The position anatomically corresponded to the course of the frontal artery and vein, as well as the middle branch of the frontal nerve. The patient referred the condition to the blow sustained when she was a child.

G. THIN, M.D.

RECENT PAPERS.

- Study of a Species of Purpura of Nervous Origin. By Dr. Couty. (*Gazette Hebdomadaire*, nos. 36, 38 and 39, Sept. 1876.)
Treatment of Herpetic Affections. By Dr. Ory. (*Le Progrès Médical*, Sept. 30.)
On Pharyngo-Nasal Syphilis. By Dr. Charles Maureac. (*L'Union Médicale*, Oct. 3.)

OPHTHALMOLOGY AND OTOLOGY.

GRAND ON SOME RARE CASES OF OCULAR PATHOLOGY.—Dr. Grand of Saint-Étienne (Loire) relates the following cases in the *Lyon Médical*, September 24, 1876.

1. *Corneal Fistula from Prolonged Lodgment of a Foreign Body.*—A metal-founder was seen six days after an accident, with a particle of metal buried deeply in the centre of his cornea. Many fruitless attempts were made to remove it, and after treatment with atropine and warm fomentations, there being little or no irritation, the man was allowed to resume his work. At the end of a month his vision suddenly became disturbed, and the eye ran tears, without being painful. On examination Dr. Grand found the anterior chamber wanting, and a fistulous opening at the seat of injury. The little piece of metal had, by exciting suppuration round itself, caused a perforation of the cornea, which its presence kept open. Renewed attempts at removal were unsuccessful. Considerable inflammation ending in iritis and synechiæ followed, which yielded to treatment, and the central opening began to heal, enclosing the remains of the metal in the corneal tissue.

2. *Fragment of Steel lodged for Five Months in the Corneal Lamina, without marked Inflammatory Reaction.*—This case offers a remarkable instance of the length of time which the cornea will tolerate the presence of a foreign body. In a young man a piece of steel, eight millimètres in length, after having traversed the cornea obliquely throughout nearly its entire thickness, remained imbedded for five months, without producing either marked inconvenience or appreciable inflammatory symptoms. At the end of this time, whilst it was in process of being thrust out by the tissues, a minute point protruded, and by its continual irritation of the eyelid in its passage over it, caused great discomfort. This stopped the man's work, and sent him to Dr. Grand, who seized the foreign body with a fine pair of forceps, and drew it out.

3. *A Case of Parenchymatous Keratitis.*—A pale, weakly, cachectic boy, the fifth child of a mother who contracted syphilis from a foster child after her first confinement, had been affected for six months with parenchymatous keratitis occupying the whole extent of both corneæ. The incisor teeth were notched, the corneæ greyish-white without vascularity. He was ordered warm compresses, calomel insufflations, and iodide of potassium (1 grain daily), with cod-liver oil. In three weeks great improvement had taken place, and in six weeks only some points of faint greyish infiltration remained. This case is cited to show that parenchymatous keratitis is not always of such long duration nor so rebellious to treatment as is believed, and further, that the absolute proscription of irritants in its local treatment is not warranted by experience.

4. *Complete Cure of an Old Detachment of the Retina, without Surgical Interference.*—After referring to cases of this kind, reported by American ophthalmologists, Giraud-Teulon, of Paris, and others, as evidence that the prognosis of retinal detachment is by no means to be considered as absolutely unfavourable, especially when the detachment is partial, Dr. Grand relates the following case. A lady having a myopia of $\frac{1}{4}$ in each eye, suffered

from a detachment of the retina in the right, which in six months had involved the whole of the inner half of the field of vision. Professor Dor, of Berne, had already seen her, and ordered Heurteiou's leech to the right temple; this was followed by benefit which lasted four days. The abstraction of blood was repeated freely, and the patient was kept lying upon her back, in a darkened room, for thirty-six hours. On examination with the ophthalmoscope, at the end of this time, the retina was found to have become replaced throughout its extent, excepting a small piece at the lower part, and the field of vision had recovered its normal extent, but opposite to the replaced retina objects had a confused look. This treatment was repeated from time to time, and supplemented by veils, coloured glasses, and the instillation of atropia. At the time of reporting the patient read $1\frac{1}{2}$ Snellen at four inches, the visual field was normal, with some slight diminution of acuity in the upper and internal part, sight was slightly clearer on rising in the morning than in the evening, and for three months the condition had been perfectly stationary. Dr. Grand draws special attention to the efficacy of the leechings (Heurteiou's), each application having brought about a replacement of the retina.

5. *Paralysis of the Superior Oblique.*—The patient, a clerk, had all the symptoms of paralysis of the superior oblique of the right eye, in all probability the result of cold. He was treated first of all by stimulating frictions round the orbit, iodide of potassium, and, in order that he might continue his work, a prism of 6° , with the base directed downwards and slightly outwards. Four days afterwards electricity was used. Dr. Grand employed the continuous current from a pile of five or six elements, with sulphate of copper and sulphate of zinc (Trouvé). The copper pole was placed upon the forehead, and the zinc pole moved about the inner angle of the eye. After half a minute at most of electrification, the diplopia disappeared completely. This improvement lasted the first time about two hours. The treatment was continued daily for ten days, at the end of which period improvement was maintained for five or six hours. Although, however, the diplopia diminished, it did not disappear, and the following frictions were used round the orbit; tincture of iodine twenty grammes, strychnia one gramme; and two pills containing extract of nuxvomica were administered daily. At the end of a week all traces of the paralysis had disappeared.

SALTINI ON THE SUBCUTANEOUS INJECTION OF CALOMEL IN SYPHILITIC IRITIS.—In a paper published in the *Annali di Ottalmologia* (vol. v., fasc. 2 and 3) Dr. Giulio Saltini discusses the question whether the rapid cures of syphilitic iritis by subcutaneous injections of calomel, reported by Drs. Quaglino, Flarer, De Magri, and others, have been due exclusively to the antisiphilic action of the remedy, or to the solvent action of mercurials in general, or to the revulsive influence which circumscribed suppurations in the temporal region exercise upon certain ocular affections. He furnishes most careful notes of five cases of syphilitic iritis which were treated in the Modena Clinique, under the care of Dr. Manfredi, where the affection yielded most rapidly to the subcutaneous injection of calomel in the temple, without any apparent effect being produced upon the general syphilitic symptoms. He reports, in addition, four cases, one of simple keratitis, two of ulcerative kera-

titis, and one of rheumatic iritis, in all of which relief speedily followed the use of calomel subcutaneously. From his observations he draws the following conclusions.

1. In the present state of scientific knowledge, the vaunted efficacy of injections of calomel in the treatment of constitutional syphilis has not been satisfactorily proved.

2. The great advantages derived from injections in the temples, in the cure of syphilitic iritis, should most probably be referred to a local action of calomel, whether solvent or revulsive, or to both actions combined, as Dr. Quaglini has judiciously observed, and as is also proved by the efficacy, above reported, of this new proceeding in the cure of non-syphilitic ocular affections.

3. To establish definitively this local action of calomel injections, some experimental researches should be undertaken, especially with regard to the effects that may be obtained by the injection of insoluble substances, such as finely powdered charcoal or sawdust, in the cure of certain eye-diseases.

LLOYD OWEN.

LADREIT DE LACHARRIÈRE ON THE EMPLOYMENT OF IODISED PREPARATIONS IN THE TREATMENT OF DISEASES OF THE EAR.—Dr. Ladreit de Lacharrière has an article on this subject in the *Annales des Maladies de l'Oreille et du Larynx* for July, 1876, an abstract of which appears in the *Paris Médical* for August 3. He makes the following remarks. Otorrhœa is the most frequent of the affections of the ear, engendered by the scrofulous diathesis. It manifests itself most often in childhood, following typhoid or the eruptive fevers, but it may persist throughout life. Even to this day some medical men consider these discharges as salutary emunctories; they speak of serious results which have followed the sudden suppression of aural discharges, and dare not interfere with them, counting on puberty effecting a cure. But on the contrary these discharges have no tendency to spontaneous cessation, and we should endeavour to stop them as soon as possible, before the work of ulceration has caused loss of the organ and occasioned an inevitable deafness.

It is when these discharges have had a certain duration, when the secretion seems to have its origin from the surface of the periosteum, or even in the bony tissue itself, that we should have recourse to iodine or its compounds. The author employs a solution of iodine, of which the following is the formula, and which he uses night and morning as an injection: \mathcal{R} . Water 1,000 parts; tincture of iodine, thirty parts; iodide of potassium, four parts.

Following subacute inflammation of the middle ear, simple engorgement of the ossicles has been observed. Left to itself, the effusion is rarely absorbed; the ossicles become less mobile, and this fixity shows itself outwardly by a great projection of the handle of the malleus. The hearing becomes more and more obtuse, and the patient suffers from musical buzzings of the most painful nature. This deafness is frequently observed in gouty people. Very often it is found useful to drop into the auditory meatus a few drops of the following solution: \mathcal{R} . Rose-water, 300 parts; iodide of potassium, two parts. These applications have sometimes caused a slight irritation of the auditory meatus, but they have also often sufficed to bring about absorption of the morbid deposit and a return to the normal condition.

A very useful means, especially in those of the lymphatic temperament subject to catarrhal inflammations of mucous membranes, consists in projecting into the cavity of the tympanum the vapour of iodine at the surrounding temperature. To do this it is sufficient to cause, by the aid of Richardson's apparatus, a current of air to pass either through a small quantity of tincture of iodine or simply over its surface.

In simple catarrh of the tympanic cavity with swelling of the mucous membrane, and deafness, the balsamic and sulphurous preparations form the basis of the most useful indications. Nevertheless, moderate revulsion is often necessary, and it has then been found useful to apply an ointment, of which the following is the formula, over the mastoid processes: \mathcal{R} . Lard, thirty parts; tincture of iodine, one part; iodide of potassium, two parts.

Diseases of the nasal fossæ, and of the pharynx, frequently react upon the ears; in this case it is only as an adjuvant that the preparations of iodine can act, but according to the author these affections are cured most completely and most rapidly when the mucous secretions have been increased for some days by the use of iodide of potassium. As for acute syphilitic osteitis and periostitis, the use of iodide of potassium in these cases is very clearly indicated.

BOUCHERON ON THE TREATMENT OF SYMPATHETIC OPHTHALMIA.—Dr. Boucheron recently read before the Société de Biologie a paper in which he proposes to substitute for enucleation of the globe of the eye section of the ciliary and optic nerves behind the eye. (*Paris Médical*, July 13, 1876). The following is his method of procedure. He divides the conjunctiva and the capsule of Tenon between the external and superior rectus about a centimètre from the cornea, and then with curved scissors penetrates between the capsule and the eye. Then drawing forward the globe seized near the cornea with forceps, he stretches the optic nerve so that the scissors touch it as a rigid cord. The optic nerve is divided, and the ciliary nerves and arteries are dealt with in the same manner, by little cuts of the scissors. A little bleeding ensues, which is easily arrested by slight pressure on the eye. In order to be sure that the operation has been perfectly done, and that none of the ciliary nerves have been permitted to escape, after the section of the optic and ciliary nerves, the opening in the capsule is enlarged and the sclerotic seized by forceps in the posterior hemisphere of the eye. This posterior hemisphere may then be easily turned forwards, so that the divided optic nerve is brought into view. The ciliary nerves may then be divided with ease, as they form a plexus round the optic nerve. Thus nothing can escape, and the operation is performed perfectly. He avoids cutting the insertion of the recti muscles, in order to preserve the anterior ciliary arteries, branches of the muscular arteries, and branches of the ophthalmic. Thus no obstacle is opposed to the re-establishment of the circulation in the eye by the anterior vascular system. Besides this, by retaining the recti muscles he preserves to the eye its normal position and movements.

The author proceeds to detail experiments which he has performed on the dog, the rabbit and the guinea-pig. He also relates a certain number of observations of cases in which the optic and ciliary nerves had been divided by wounds. Now, in all

these cases, unless some other cause of weakening was joined to the wound, he did not observe any grave lesions of the refractive media.

The indications for the section of the optic and ciliary nerves may be given in a few words. This operation should be substituted for enucleation in all cases, unless suppuration of the eye is certain. But the great advantage of this operation is its power of being employed as a preventive measure. The International Ophthalmological Congress in 1872 accepted, in principle, that enucleation of a wounded eye should be performed immediately if one wished to make sure of warding off often irremediable attacks of sympathetic ophthalmia. This radical and terrible measure, however, has not come into ordinary use. It is hoped that the operation just described, so simple, so inoffensive, and so conservative in its nature, will be able to afford to patient and practitioner important services.

W. DOUGLAS HEMMING.

RECENT PAPERS.

Some Rare Cases of Ocular Pathology. By M. Grand. (*Lyon Medical*, Sept. 24.)

Prognosis of Wounds of the Vitreous Body. By M. J. Gayat. (*Ibid.* Oct. 1, 1876.)

FOREIGN UNIVERSITIES.

UNIVERSITY OF GENEVA.

The University of Geneva grants the degrees of Bachelor in Medical Science and Doctor of Medicine.

The following classes of persons are admitted as students in the Faculty of Medicine; 1. Bachelors in Letters; 2. Bachelors in Science; 3. Students who have attended during two years lectures in the Section of Philosophy, and have undergone the examinations at the end of each year; 4. Pupils from the Classical Section of the Gymnasium, with certificates of studies; 5. Swiss and strangers who give evidence of their studies by means of diplomas or certificates; 6. Persons who undergo satisfactory oral examinations in the subjects comprehended in the classical section of the Gymnasium. Persons who furnish evidence that they have studied abroad, for a year at least, in a corresponding faculty, may be inscribed in the Faculty of Medicine.

The course of study is as follows:—*First Year: Winter Session:* Botany (first part); Physics (first part); Comparative Anatomy or Zoology; Inorganic Chemistry; Practical Comparative Anatomy. *Summer Session:* Botany (second part); Physics (second part); Comparative Anatomy or Zoology; Organic Chemistry (first part); Practical Chemistry; Botanical Excursions. *Second Year: Winter Session:* Descriptive Anatomy (first part); Physiology (first part); Organic Chemistry; (second part); Dissections. *Summer Session:* Descriptive Anatomy (second part); Physiology (second part); Practical Chemistry and Practical Comparative Anatomy. (Students are recommended to attend in addition courses of other subjects, such as Astronomy, Geography, Physics, Mineralogy, Geology, etc.) *Third Year: Winter Session:* Descriptive Anatomy (third part); Normal Histology; Dissection. *Summer Session:* Regional Anatomy; Embryogeny; Supplementary courses on subjects of the preceding years, on which the student's knowledge is weak;

Practical Physiology, Histology, Comparative Anatomy, and Chemistry. (The examination for Bachelor in Medical Sciences is now undergone). *Fourth year: Winter Session:* General Pathology; Internal Pathology; External Pathology; Dissection of Regions; Medical and Surgical Hospital Practice. *Summer Session:* Special Pathological Anatomy; Pathological Histology; Internal Pathology; External Pathology; Pharmacology; Medical and Surgical Hospital Practice; Exercises in the Laboratory of Pathological Histology.—*Fifth Year: Winter Session:* Therapeutics; Hygiene; Legal Medicine; Theory of Obstetrics; Internal Pathology; External Pathology and Operations; Medical and Surgical Hospital Practice.—*Summer Session:* Therapeutics; Legal Medicine; Internal Pathology; External Pathology; Medical and Surgical Hospital Practice; Operations.—*Sixth Year: Winter and Summer Sessions:* Medical, Surgical, and Obstetrical Hospital Practice; Polyclinic; Ophthalmology, Psychology, etc. Repetitions preparatory to the examination for the Doctorate.

Persons who have satisfied the conditions laid down regarding the admission of students to the Faculty of Medicine may become candidates for the degree of Bachelor in Medical Science. Students who have undergone the recognised annual examinations in the Faculty of Medicine or of Sciences are exempt from oral examinations in the subjects in which they have already been examined; provided that the examinations have been undergone not more than two years previously. Persons who produce diplomas or certificates giving evidence of their studies may be exempted from further examinations in the subjects in which they have already passed.

The following may become candidates for the degree of Doctor of Medicine: 1. Bachelors in Medical Science; 2. Persons who produce diplomas or certificates indicating that they have gone through an equivalent course of study. There are five examinations for the degree of Doctor of Medicine.—*First Examination:* Human Anatomy and Histology; Physiology; Pathological Anatomy and General Pathology; a Necropsy, for which one hour is allowed; making an Anatomical Preparation, for which four hours are allowed.—*Second Examination:* Medicine; Surgery; Operative Surgery; three Operations, and Application of Bandages.—*Third Examination:* Hygiene; Therapeutics; *Materia Medica* and Pharmacology; Legal Medicine; a Medico-Legal Report on a real or supposed case, for which one hour is allowed.—*Fourth Examination:* Clinical Examination of two medical and two surgical patients and of one case of labour (fifteen minutes being allowed for each case); Obstetrics, with operations on the mannikin; Discussion on each Clinical Case: Written Commentary on a Medical and a Surgical Case, two hours being allowed.—*Fifth Examination:* Defence of a printed Dissertation, in the French language, on a subject in medical science chosen by the candidate. The dissertations must be previously communicated to the Faculty.

The examinations are public. Those for the degree of Bachelor are held at the beginning and end of the University year, and in the interval between the sessions. Applications for admission must be made to the Dean of the Faculty of Medicine eight days before the day of examination. The examinations for the degree of Doctor take place, on the demand of the candidates, at times determined by the Faculty.

The following courses of lectures will be delivered by the Faculty of Medicine. *Winter Session.*—Normal Anatomy, Professor Laskowski; Physiology, Professor Schiff; Histology, General Pathological Anatomy and Physiology, and Necropsies, Professor Zahn; Clinical Medicine, Professor Revilliod; Clinical Surgery, Professor Julliard; Clinical and Theoretical Midwifery, Professor A. Vaucher; Polyclinic, Professor Vulliet; Internal Pathology, Professor D'Espine; External Pathology and Operative Surgery, Professor Reverdin; Therapeutics, Professor Prevost; Hygiene, Professor Dunant; Pharmacology, Professor Brun; Psychiatry, Dr. Olivet. The following are free courses: Gynaecology, Dr. Gautier, Dr. Devrient, and Dr. Cordés; General Pathology, Dr. Durante; Ophthalmology, Dr. Barde and Dr. Haltenhoff; Accouchements, Dr. Odier; Balneotherapy, Dr. Glatz; Functions of the Central Nervous System, Dr. C. Geib; Dental Medicine and Surgery, Dr. Guillot. *Summer Session.*—The same subjects are taught (other departments being taken) as in winter, except Histology, General Pathology, Pharmacology, and Balneotherapy, and the following are given in addition: Special Pathological Anatomy, Professor Zahn; Legal Medicine, Professor Gosse; Pathology of the Urinary Organs, Dr. E. Martin; Otology, Dr. Colladon.

The winter session commences on October 16, and ends March 16, 1877; the summer session commences March 25, and ends June 22.

UNIVERSITY OF BRUSSELS.

By the regulations of the University of Brussels, British and other medical practitioners, provided with proper qualifications, are admitted to examination before the faculty for the degree of M.D. Residence is not required from such as are unable to absent themselves long by reason of their professional occupations.

No degrees, however, are granted *in absentia*, and candidates must come over in person and have their names inscribed in the books of the University. The fees are, for inscription of name, 215 fr. (8*l.* 12*s.*); for examinations, 315 fr. (12*l.* 12*s.*); for legislation of diploma, 10 fr. (8*s.*); total 540 fr. (21*l.* 12*s.*) The examination consists of three parts: 1. General Therapeutics, including Pharmacodynamics (proportions of doses), Special Pathology and Therapeutics of Internal Diseases, General Pathology, and Pathological Anatomy. 2. Surgical Pathology, Theory of Midwifery, Public and Private Hygiene, Medical Jurisprudence. 3. Examination at the Hospital of one or two patients under Medical and Surgical Treatment; Examination in Midwifery, consisting in Obstetrical Operations on the *mannequin* (model of pelvis); Examination in Operative Surgery consisting in some of the usual operations on the dead subject, such as amputation, ligature of an artery, etc.

Great importance is attached to practical knowledge, but candidates must also prove that they possess positive theoretical science.

Examinations take place at any time between October 15 and June 20, except during the Christmas and Easter vacations. They are *viva voce* and written, but candidates may be exempted from the latter and confine themselves to the *viva voce* tests. Candidates must exhibit their qualifications or diplomas.

The three examinations may be got through in a week, allowing a day's interval between each test. Saturday is the most eligible day for arriving, for candidates for whom time is an object. The delay of a week is, however, never exceeded by more than a day or two.

The examinations are conducted in English through the medium of an interpreter, for such candidates as are not familiar with the French language.

The degrees granted by the faculty are merely scientific titles, and do not confer the right to practise medicine in Belgium.

UNIVERSITY OF STRASSBURG.

The following is an extract from the regulations of the University of Strassburg relative to Degrees in Medicine.

Any person desirous of obtaining the Degree of Doctor of Medicine can only be admitted to graduation on fulfilling the following conditions. *a.* If he belong to the German empire, he must have completed the academical four years' course of study of Medicine, or of the Natural Sciences. By an unanimous decision of the Faculty, one or two Sessions may be omitted. Foreigners desirous of graduating are not required to have passed through the four years' course, if they produce proof of having received instruction equivalent to the course of study in the Medical Faculties of Germany. *b.* He must present a scientific essay (dissertation) composed by himself. *c.* He must undergo the Faculty examination. *d.* He must pay the prescribed fee of 100 thalers (about 15*l.* 15*s.*).

In his application for graduation, which must be addressed to the dean, the candidate must produce the evidence referred to in *a*, and forward a scientific memoir on some department of medicine, with a written assurance that it is absolutely his own composition.

If the dissertation receive the approval of the Faculty, the candidate is admitted to examination.

The examination is conducted by the ordinary professors, and consists, as a rule, of an oral theoretical examination in all important departments of medicine. If the candidate fail to give satisfaction in the oral examinations, he must, in order to obtain the degree of doctor, again undergo the examination after a time to be determined by the Faculty, but he is not required to present a second dissertation.

In the case of candidates who have already passed the State examination, a colloquy before three members of the Faculty may, by the unanimous decision of the Faculty, be substituted for the oral examination.

Degrees in Medicine are not conferred on absent candidates.

The fee of 100 thalers is to be paid to the dean at the time when the candidate offers himself. If the scientific dissertation be rejected, the candidate receives the whole fee back. If the dissertation be approved, but the candidate fail in the examination, the fee is not returned to him, but, when he is again admitted to examination, only half the fee is required.

After the faculty examination has taken place and the dissertation has been printed and published, the candidate is formally admitted to the degree of Doctor by the issuing of a printed diploma, the

names of the successful candidate being announced on the black board.

The candidate has to bear the expense of printing the dissertation and of the diploma.

There is no public ceremony, and no oath is administered.

The lectures for the session 1876-77 begin on Monday, October 16. Matriculation takes place on the first four Wednesdays of the season, from twelve to one o'clock. After the end of these four weeks, the rector can allow matriculation only on special grounds. Any one desirous of matriculating as a student, and attending the lectures and other instruction given in the University, must, on his arrival in Strassburg, communicate with the Secretary of the University, in order to be inscribed. Other persons desirous of attending the lectures must obtain permission from the respective teachers, and must then at once communicate with the Secretary of the University.

The following are the professors and teachers of the University, with the courses of instructions which they will give in the coming academical year. *Ordinary Professors.*—Dr. Waldeyer: Human Systematic Anatomy (first part); Comparative Anatomy of the Apparatus of Digestion, Circulation, and Respiration; History of Development; Dissections; Instruction in Special practical work in the Anatomical Institute.—Dr. Jössel: Dissections; Osteology and Syndesmology; Topographical Anatomy of the Extremities, Head, and Neck.—Dr. Goltz: Experimental Physiology of the Vegetative Organs and Organs of Sense; Exercises in the Physiological Laboratory.—Dr. Hoppe-Seyler: Physiological and Pathological Chemistry; Practical Course of Medical Chemistry; Laboratory Instruction in Physiological Chemistry; Hygiene.—Dr. Schmiedeberg: Experimental Pharmacology and Therapeutics; Toxicology; Instruction in the Pharmacological Laboratory.—Dr. von Recklinghausen: General Pathological Anatomy and Physiology; Malformations; Demonstrations of Pathological Anatomy, with *Post Mortem* Examinations.—Dr. Kussmaul: Medical Clinic; Medical Polyclinic; Diseases of the Organs of Circulation; Diseases of the Stomach.—Dr. Lücke: Special Surgery, first part; Surgical Clinic and Polyclinic.—Dr. Guserow: Theory of Obstetrics; Diseases of New-born Children; Obstetric and Gynaecological Clinic.—Dr. Strohl: Legal Medicine; Forensic Psychiatry.—Dr. Wiegner: History of Medicine, first division; Clinic of Syphilitic and Cutaneous Diseases.—Dr. Aubenat: Labours; Pathology of Pregnancy.—Dr. Jolly: Theoretical Psychiatry; Psychiatric Clinic.—*Extraordinary Professors.* Dr. Laqueur: Clinic of Diseases of the Eye; Course of Ophthalmoscopy for advanced students.—Dr. Kohts: Medical Polyclinic; Children's Polyclinic and Diseases of Children. *Private Teachers.* Dr. Kuhn: Otorrhoea; Clinic of Diseases of the Ear.—Dr. Friedländer: Diseases of the Organs of Respiration.—Dr. Rähmann: Theory of Ophthalmic Surgery, with demonstration of the more important cases of Disease; Course of Ophthalmology.—Dr. Tiegel: Physiology of the Muscles; Electro-Physiology.—Dr. Sonnenburg: Dislocations and Fractures; Instruction in Bandaging and Operating.

SOCIETIES.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

The following papers were read in the Department of Anatomy and Physiology, Section of Biology, at the recent meeting in Glasgow.

The Physiological Action of Vanadium.—Mr. John Priestley stated that the results of this research were embodied in a paper presented to the Royal Society of London, an abstract of which appeared in the last volume of the *Proceedings*. Vanadium was a metal that had been carefully examined by Roscoe, but nothing was ascertained in that examination as to its physiological action. It belonged to the group of metals including arsenic, antimony, and bismuth, and its atomic weight was 51.2, very nearly resembling chromium. It formed four series of compounds, and numerous experiments had been made as to the action of solutions of the metal on physical organisms. It was found to be an intense irritant poison, rapidly causing death, which was accompanied or preceded by paralysis, convulsions, and supervening drowsiness. It appeared that all the solutions except those that were extremely diluted acted injuriously on such organisms as the bacteria, germinating seeds, fungi, and so forth. It was applied to rabbits, pigs, cats, dogs, pigeons, and frogs, and the results might be thus briefly stated.—The solution was injected into the skin, into the veins, and into the alimentary canal, and in all cases the results were similar. The symptoms were first of all paralysis of motion, next convulsions either local or general, and then rapidly supervening drowsiness, congestion of the alimentary mucous membranes, the presence of a fluid mucus in the intestines after death, and certain changes of respiration, and, coincidently, a falling temperature and feebleness of pulse. Experiments on respiration, circulation, and the nervous system had been made at length. Experiments on a rabbit showed that, both before and after the division of the nerve-centre, vanadium caused in the first instance a stimulation, and in the next a depression of respiration. This was due to the action of the poison on the nervous centre of the medulla. It was also found, by injections made under the skin and into the veins, that vanadium caused a diminution of blood-pressure and irregularity of pulse. When a frog had been poisoned by injected vanadium, it was found that when the reflex irritability was entirely abolished, and the muscles and nerves were tested by electricity, the work done compared with the normal work of muscles not poisoned, did not show any difference.—Professor Gamgee read a paper on the action of vanadium upon the intrinsic nervous mechanism of the frog's heart. He said that he had found certain definite phenomena following the injection of vanadium. The ventricle came to a stand-still when a certain quantity was injected, but where the quantity was exceedingly small, the ventricular systole was rendered slow, the auricles began to beat more slowly, and finally the heart stood still. The inhibitory centres of the heart connected with the auricles were not affected, but the vagus lost its power of inhibiting the ventricle. It might be suggested that this remarkable action of the poison resulted from the fact, that vanadium did not act on the inhibitory fabric connected with the vagus or centres of the auricles, and that there was one in-

hibitory centre of the ventricle quite distinct from the inhibitory centres of the auricles. He should be loth to formulate such a suggestion. Physiologists knew nothing of the inhibitory centres in the heart; they only surmised their existence to account for the phenomena exhibited in cases of poisoning by nicotine and other poisons. The researches of Mr. Priestley had shown that vanadium was not a muscular poison, because after it had been injected the muscles were found to retain all their irritability. He (Professor Gamgee) was not prepared to say to what extent the phenomena in the heart were really due to the influence exerted on the contractile substance of the heart. Digitalis, veratrine, and antiar had been looked upon as muscular poisons, but he should be inclined to think that they were not, because, while they affected the contractions of the ventricle, they did not affect the contractions of the auricle. No doubt vanadium must be regarded, like digitalis and other poisons, as a poison of the muscular substance of the heart, but more particularly as a poison of the nervous apparatus of the heart. Dr. Gamgee next gave a summary showing the difference in the poisonous activity of the orthophosphoric, metaphosphoric, and pyrophosphoric acids. He pointed out that, although all the vanadates were poisons in the animal economy, they differed considerably in intensity; and having given an account of the results of experiments with different acids, he arrived at the conclusion that the metaphosphoric acid was not so poisonous as the pyrophosphoric, and that there was a great relationship between all these phosphates and the corresponding vanadates. He also stated that not only did the pyrophosphoric acid produce death very rapidly when administered in certain quantities, but that it might be made to produce the same result very slowly. Professor Gamgee also summarised the results of experiments, showing the physiological action of pyrophosphoric acid, especially as a cardiac poison.—Professor Kronecker (of Leipzig) said that he believed that the substances referred to were really muscular poisons of the heart; that he saw no reason for doubting that they acted on the muscular substance of the heart; and that the experiments might be explained by supposing that the muscular substance of the auricle presented a different character from the muscular substance of the ventricle; that they did not act as poisons to the voluntary muscles; but that they acted as direct poisons to the muscles of the heart.

The Nervous Apparatus of the Lung.—Dr. W. Stirling pointed out that numerous nerve-cells were found in various organs of the body, and that the lung was no exception in this respect. There were numerous nerves entering the lung and accompanying the bronchi and blood-vessels. These nerves were derived from the pneumogastric and sympathetic nerves, which nerves accompanied the blood-vessels. In the course of these nerves numerous small masses of nervous matter, constituting ganglia, quite visible to the naked eye, were intercalated. These ganglia were most numerous around the bronchi at the base of the lung, and could easily be isolated by means of a dissecting microscope. The probable destiny of each of the two sorts of nerve-fibres—white and grey—found in the ganglia, was indicated; the former supplying the bronchial mucous membrane and the bronchial muscles, while the latter probably presided over the muscular fibres of the blood-vessels, and so, controlling the calibre of the vessels, regulated the amount of blood passing

through them.—Professor Gairdner pointed out that there were certain circumstances in which parts of the lungs were exposed to undue strain and dilatation, while the supply of air to those parts appeared from stethoscopic examination to be regulated so as to protect them, and asked whether Dr. Stirling could explain how this protection was afforded.—Dr. Stirling informed Professor Gairdner that the question of the supply of air to the different air-vessels was an extremely difficult one, but he thought that probably the regulating centre lay higher up than the medulla, and that a limited portion of that centre might affect only a limited portion of the nerve-cells lower down, because it was well known that if a single fibre were stimulated, the structures in which that fibre terminated would be the only ones acted upon.—Dr. McKendrick was of opinion that the ganglion centres discovered by Dr. Stirling might act as local centres for structures higher up.

The Brain of the Canidæ.—Mr. R. Garner read a paper on the size, etc., of the brain of the Canidæ. From measurements of brain-capacity, and from casts taken from the interior of the skulls of numerous dogs, the author drew the conclusion that the size of the brain did not correspond very closely with the size of the animal. He was disposed to argue the descent of the domestic dog (he did not treat of the origin of the dog primitive) from one or more dogs, as no dog had as large a brain as the wolf, nor one so small as the jackal, from both of which the descent of the dog had often been inferred. The size of the brain in the dog varied very little in the different sized animals, that of a Newfoundland dog being very little larger than that of a terrier; and the intelligence of the animal did not increase with the size of the dog, though in specific species there was an increase of intelligence in proportion to the increased size of the brain. He could not connect the powers of dogs with any peculiarity of brain organisation, but he found that in dogs with fine scents the front brain was elongated or enlarged.—Professor Macalister (of Dublin) desired to give the results of his examination of the brain of the celebrated greyhound 'Master M'Grath,' and stated that, after examining the brains of a great many other greyhounds, he was surprised to find that 'Master M'Grath's' brain was a good deal heavier than that of any of the others, and that it was not only larger, but that the convolutions were much more complex. He had also found that in complexity of convolutions the brains of dogs varied as much as those of human beings. He did not agree with Mr. Garner that the proportional weight of the brain of the wolf was greater than that of the dog, the result of his investigations in this respect being to place the brain of the pointer first, those of the mastiff and setter next, while that of the wolf took the third place. The greyhound had a very small brain in comparison with its size. He had found in the case of 'Master M'Grath' that the heart was exactly double the weight of that of an ordinary greyhound, and he would suggest whether it might not be that the great speed of that animal was due to this fact, it being a curious coincidence that the famous horse 'Eclipse' had a heart two-thirds heavier than that of any horse of his own size.—Professor Allen Thomson put it that, in the case of the size of the heart, there might be a way of looking at the question that was exactly the inverse of that which it was regarded by Mr. Macalister. He should be rather inclined to think that the large heart

was the result of the running, and not that the speed was produced by the size of that organ.—Mr. Garner pointed out that, of course, the question of structure must be considered, as well as that of size, otherwise the elephant and the whale might be supposed to have greater brain-power than man.

Physiological Action of Chromium.—Mr. Priestley offered some observations on the physiological action of chromium, stating as the results of experiments performed on rabbits, guinea-pigs, and frogs, that the action of chromium was twofold; first, it induced irritation of the alimentary mucous membrane, which was evidently congestion and ecchymosis; and secondly, it acted directly on the great nerve-centres, causing convulsions, paralysis, vomiting, a fall of blood-pressure, and a sudden and temporary stoppage of the heart in dilatation. It was not specially a poison of muscle or nerve trunks.—Professor Gamgee remarked that physiological investigation bore out the judgment of chemists, as they had said that chromium was unlike vanadium, while the physiologist had ascertained and asserted the same fact.

The Effect of Esmarch's Apparatus on the Circulation.—Professor Gamgee read a paper on the changes of circulation which are observed when blood is expelled from the limbs by Esmarch's method. The author stated that experiments carefully conducted on Esmarch's method with healthy students had produced the following results. When the blood was expelled from one leg the heart beat more rapidly, but only for a short time, and the same result followed the application of the bandage to the second leg. When the heart began to beat at its usual rate, the tourniquets were loosened, and in an instant the limbs, previously blanched, became suffused with a blush, while sensibility therein became more and more blunted, and the heart bounded off at an exceedingly rapid rate, to return, however, to its normal beat almost immediately. In applying the bandage, the blood in the veins was first expelled, then that in the arteries, and next there was an expulsion also of the lymph. He was of opinion that compressing the limb would send more blood into the veins than into the arteries, and as the lymph would go to swell the venous pressure, the venous blood *plus* the lymph would be greater in amount than the blood sent into the arteries. But the valves in the veins would prevent the increase of pressure in all parts of the system. It had been suggested that the increase of heart-beat, when the bandage was applied, was intimately connected with the diminution of the normal difference between arterial and venous pressure; that, if the right side of the heart were subjected to greater pressure, that would cause an increase of the cardiac contractions. These certainly were facts making it likely that an increase of pressure on the right of the heart tended to quicken the heart-beats; and the quick beats on the removal of the bandage were no doubt the result of the removal of the arterial pressure.—Professor Kronecker pointed out that they must consider the influence of the altered chemical composition of the blood on the heart-beats by reason of the addition of the products of the waste of tissue included in the lymph. He did not see that it should be concluded, from the effect of the sudden change of pressure on the sensibility of the skin, that the circulatory apparatus was affected in the same way, for the observations of Tscheriew showed that an increase in the blood-pressure seemed to increase the rate of cardiac pulsations.

REPORTS OF FOREIGN SOCIETIES.

FRENCH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

The following are the principal papers which were read at the recent meeting at Clermont Ferrand, classified under their different headings.

ANATOMY AND PHYSIOLOGY.

On some points in the Anatomy and Physiology of the Sclerotic.—M. Gayet treated in the first instance of the fibrillary substance which presents itself in the form of layers meeting each other at very acute angles, so that the sclerotic is constituted by a thick felting and not by layers of fibres in parallel directions. When we divide these fibres, of which the layers take every possible direction, we see that they have a great tendency to curl up, and consequently to become shortened. There are two orders of vessels, those which traverse that organ to penetrate into the deep portions of the eye, and the nourishing vessels of the membrane. The first pass through the sclerotic in a kind of sheath lined with stellate cells, which seem to come from the lamina fusca. The others have no sheath. The fibres of the sclerotic insert themselves under their walls, and thus keep the lumen of the canal open.

On the Effects of the Excitement of the Sensory Nerves on the Heart, the Respiration, and the Circulation.—M. Franck, in giving a general view of his cases, adopted as a formula the thought of M. Claude Bernard, 'Stoppage of the heart, or syncope, may occur under the influence of an intensely painful excitement, of whatsoever nature it may be.' Under the influence of a painful excitement, the heart stops, and that stoppage is more or less considerable, according to the intensity of the impression, the sensibility of the animal, etc. The suppression of pain by anæsthesia brings on the suppression of the cardiac reaction, because the instrument of the cardiac manifestation is wanting, the pneumogastric nerves being paralysed.

MEDICINE.

On some little-known Changes in the Mucous Membrane of the Stomach.—M. Gallard observed two cases of hæmatemesis which could not be attributed to any change in the stomach, but might be referred to the rupture of small aneurismal tumours, described by M. Liouville under the name of miliary aneurisms. In the first case, the necropsy revealed a minute ulceration attached to an arteriole; it was a miliary aneurism. In the same case the same colouring was found in other points, due to the same cause. M. Gallard showed also a case of diabetic ulcer of the stomach in an alcoholic patient, and drew attention to the fact that the name of ulcer of the stomach is given to a large number of different lesions.

Neuralgic and Visceral Neuroses in Cerebro-Spinal Diseases.—A paper on this subject was read by M. Teissier, sen., of Lyons. Visceral disturbances are met with equally in the first period of general paralysis, and of sclerosis of the anterior columns. M. Teissier had, indeed, observed them in a case of angina pectoris, which for several months masked the commencement of diffuse encephalitis; in gastric crises with hæmatemesis, also at the initial period of general paralysis, in a case of violent and paroxysmal enteralgia in a lady who subsequently became

paralytic; in two cases of convulsive bronchitis, completely simulating whooping cough and lasting several months in ataxic patients; in several cases of extreme frequency and irregularity of the pulse, without any appreciable lesions of the heart; in an unusual case of neurosis of the heart, of which the attacks were later on replaced by epileptiform crises.

Accidents following the Operation for Empyema.—M. Leudet, of Rouen, related the case of a patient who, after an operation for empyema, either by the friction of a *sonde-à-demeure*, or by the washing out of the pleura, felt numbness and pain in the right hand, whilst the pleural fistula was situated on the right, with passing aphasia and visual troubles. These accidents were, according to the author, of a reflex nature, and sprang from the irritation of the pleura.

Characters of the Pulse in Painter's Colic.—M. Teissier, sen., of Lyons, said that the pulse in this disorder is slow and vibrating, and its trace shows a short ascensional line, slightly inclined at the top with two rebounds, of which the second is more accentuated than the first.

Phimosis in its Relations with Diabetes Mellitus.—According to M. Bourgade, this phimosis, already pointed out, is due to irritation caused by the sugar in the urine. The interesting point of this communication is the author's recommendation not to operate on phimosis due to this cause, and the precaution he advises not to attempt the operation until after having analysed the urine.

Otoscopy applied to the Diagnosis of Deafness.—In a paper on this subject, M. Philipeaux, of Lyons, said that if a patient do not hear the tick of a watch placed on the mastoid apophyses or the temporal bone, we must not always make up our minds to the presence of an incurable deafness, owing to a paralysis of the acoustic nerve. The presence of a plug of cerumen compressing the middle, and even the internal ear, by the chain of ossicles, may produce this phenomenon, which disappears if the plug be removed.

The Relation between Pleurisy and Hydatid Cysts of the Liver.—M. H. Petit described three cases, in which it was demonstrated that an intercurrent pleurisy had the clearest effect on the development of pre-existent hydatid cysts.

Hordeaceous Bezoards.—A man came to consult M. Prunières, of Marvejols, for a cancrroid of the lips, on which he operated successfully. Some time afterwards, there were diarrhoea, colic, and abdominal pains, which gave rise to apprehensions of an intestinal generalisation of the disorder. Suddenly, however, the patient evacuated a large number of round, hard, chestnut-like bodies. Whence came these concretions, since the patient did not eat chestnuts? Specimens were sent to M. Robin, who replied that they were due to an accumulation of husks of oats or perhaps of barley. At the same time, M. Prunières learned of his patient that a medical man had recommended him to eat unbolted barley meal, and that he took it from time to time.

On Diabetic Ulcers and Fistula.—M. Cornillon, of Vichy, recorded three cases in which fistulae, inveterate remains of abscesses which had supervened in diabetic patients, extensive ulcers lasting for an indefinite time, disappeared in a few days under the influence of alkaline treatment. The diabetes had been improved, and the improvement had immediately exercised an influence of the local affections, whether ulcers or fistulae.

On the History of Exophthalmic Goitre.—According to M. Gagnon, of Clermont, exophthalmic goitre may supervene before the age of puberty. The author also quoted a case in which the relations between cholera and exophthalmic goitre were demonstrated in the clearest manner.

SURGERY.

On Resection of the Upper Maxillary Bone.—M. Letiévant recommended a modification in this operation, consisting in the preservation of the suborbital nerve, which keeps up the mobility of the facial mask, and the rapid and energetic reaction of the muscles, under the influence of the will and of electricity.

On the Successful Results of Surgical Treatment at Home.—M. Baraduc gave the results of ten years' surgical practice in a very large coal-mining establishment. The most serious wounds scarcely ever had unfortunate results, which the writer attributed in the first instance to the goodness of the Auvergnat race, and specially to treatment at home. He therefore very strongly opposed the establishment of an hospital.

Amputation performed on a Patient suffering from Albuminuria.—M. Verneuil laid it down that no operation should be attempted on patients suffering from diabetes or albuminuria. Any injury rapidly carries off patients under these conditions. There are, however, exceptions to this rule, of which M. Terrillon quoted a remarkable one. The case was that of a man, aged twenty-nine, who, being drunk, fell down and broke his fore-arm, and at the same time wounded himself so as the wound communicated with the seat of the fracture. Notwithstanding the most methodical dressing, a diffused phlegmon supervened, accompanied by *delirium tremens*. The phlegmon made such progress that, notwithstanding the presence of an enormous quantity of albumen in the urine, M. Terrillon decided on performing amputation of the arm, which was followed by immediate improvement, rapid cicatrization, and complete disappearance of the albumen.

On the Treatment of Epulis.—M. Bercheron recommended the employment of caustics, especially of Vienna paste, which had been more successful in his hands than the bistoury and the linear écraseur.

On the Treatment of Uterine Inversion by the Elastic Ligature.—In a case of uterine inversion in which he had tried reduction ineffectually by all the means usually employed, M. Arlès drew out the inverted uterus and surrounded it by a moderately tight India-rubber tube. The results were very simple, and the tumour came away in a fortnight. M. Arlès affirmed that the elastic ligature is superior to all the methods hitherto employed.

On an Undescribed Variety of Epithelioma.—M. Paul Réclus said that the upper jaw may be the seat of rapidly progressing epithelioma, characterised by a spacious cavity and lined with exuberant granulations. It is probable that these perforating epitheliomata originate in the cysts often attached to the roots of the teeth. These cysts, as well as the ordinary epitheliomata of the jaws take their rise in the epithelial *débris* which are the vestiges of the budding of the cords of the first and second teeth.

On Certain Forms of Coup de Fouet.—There are a mild form and an acute form of *coup de fouet*. The latter is most generally met with in varicose patients. M. Verneuil cited several examples, of which one was followed by purulent infection and the death of the

patient. The opinion of J. L. Petit on the rupture of the small femoro-calcaneal muscle has never been confirmed by necropsy. M. Verneuil admitted the opinion of the elder Sédillot, who believed in a muscular rupture. But M. Verneuil attributed the serious forms of *coup de fouet* to the rupture of the large varicose veins, which traverse the muscles of the calf. At the moment an effort is made, they break, whence sudden pain, considerable ecchymosis, phlebitis, and all the accidents which may arise from it. M. Verneuil recommended the greatest precautions when the *coup de fouet* occurs in a varicose patient; repose, immobility during several days, until phlebitis is averted or cured, if it shows itself.

Tuberculous Ulcers of the Roof of the Mouth, Gums, and Lips.—M. Le Dentu stated that tuberculous ulcers of the lips had not hitherto been noted. They do not differ in appearance from tuberculous ulcers of the tongue.

On Traumatic Oliguria.—A paper by M. Nepveu referred to two cases of consecutive oliguria; one from a blow in the lumbar region, the other from a penetrating wound of the small pelvis and the abdomen.

PSYCHOLOGY.

Case of Double Consciousness.—M. Azam of Bourdeaux related the case of a young girl who exhibited very strange phenomena. After the slightest vexation, the slightest emotion, her head fell on her breast, and she fell into a light slumber. At the end of a few minutes she woke very lively, attended to her daily occupations, and in two or three hours again bowed down her head to go to sleep. When she awoke she had no memory of what had occurred in the interval of the two slumbers. The amnesia was complete. This girl became pregnant; in one of her conditions, she knew it, spoke of it, and named the father of the child; in the other she was ignorant of all these details, even to the pregnancy itself. The other details of this case showed very varied hysterical phenomena, convulsions, paralyses, hæmorrhages, red spots on certain parts of the body. The latter phenomena involuntarily invite comparison between this fact and a recent celebrated case of so-called stigmatisms.

ENDEMICS AND EPIDEMICS.

The Etiology of Goitre in the Puy-de-Dome.—The predisposing causes of goitre, according to M. Rivet, are living in a valley or a humid plain, dwelling in rooms in which the air is charged with organic matter or carbonic acid, excessive sweating, overwork, insufficient and bad nourishment. Acute goitre, if uncared for, may become a nidus of endemic goitre, and give rise to constitutional and hereditary disease. M. Rivet ascribed an important part in the production of goitre to the great atmospheric currents coming from the western mountains. The author seemed inclined to attribute the goitre to a rheumatic affection of the vaso-motor system of the thyroid gland. He made no distinction between endemic and acute goitre, and as to its production only recognised a single cause; but he considered the disease as the result of a concurrence of various circumstances.

On Cholera in the Centre of France.—M. Mignot, who had observed more than seventy-five cases of cholera nostras, believed it to be incontestable that in certain cases, as in Asiatic cholera, it may take on an epidemic form.

SYPHILOGRAPHY.

On Syphilis by Conception.—M. Diday thus called syphilis transmitted from the foetus to the mother. This transmission has been denied, and it has been maintained that the infection came from the husband, and that the existence of an initial chancre in the woman had been misunderstood. M. Diday reported twenty examples of women having been infected with syphilis by the foetus, and in whom no traces of chancre existed. A man may then infect a woman both as husband and as father.

FORENSIC MEDICINE.

On the Medico-Legal Aspects of Deglutition in New-Born Infants.—M. Houzé de l'Aulnoit related the following case. A new-born infant, immediately after birth, and before it breathed, was thrown into liquid in the common sewers. At the necropsy, it was found that the child had swallowed, though docimasia indicated that it had not breathed. Could it be said that it had lived?

On Pulmonary Docimasia.—M. Laennec, of Nantes, stated that if a portion of lung which has not breathed be triturated, this manœuvre drives out the gas it contains; if the lung then be thrown into water, it will inevitably sink to the bottom of the vessel. But if the lung have breathed, notwithstanding a lengthened and strong trituration, the same portion of lung will swim. M. Laennec extolled this method in cases where the putrefaction of the lung would seem to make all researches unavailing.

ETHERISATION.

Etherisation in Young Children.—Generally considered as inoffensive, etherisation in young children, as performed by M. Tripier, of Lyons, has given rise to grave accidents, without, however, causing the death of any child. In children from five to eight years old, he has observed a sudden arrest of the respiration, with persistence of the cardiac movements. There was at the same time an abundant expectoration of thready mucosities proceeding from the bronchi.

OPHTHALMOLOGY.

On a Modification of Von Graefé's Method for the Operation of Cataract.—M. Galewski no longer performs sclerotic puncture and counter puncture; he localises the entire wound in the limits of the cornea; thus he leaves the linear wound on one side to replace it by a lower flap in the place of the upper flap. He attributed to this lower excision a great part in the successes which he has obtained, which are ten per cent.; since, out of sixty-seven operations performed by him in private practice, he had not recorded one single failure.

On the Treatment of Detachment of the Retina.—Contrary to Von Graefé's opinion, M. Galewski believed in the cure of this accident, which may be caused either by choroidal inflammations, or by the destruction of the retinal vessels, occasioned by a serous transudation. In the first case, antiphlogistic treatment brings on favourable results. In the second case it is necessary to withdraw a certain quantity of liquid as promptly as possible; and for this purpose, the writer had a small syringe constructed on the model of Dieulafoy's syringe, with which he can remove the serous liquid effused into the eye without issue of the vitreous body.

On Drainage of the Eye.—To remedy excessive secretions of liquid into the eye, M. Wecker proposed a drainage, which he performed by means of the

metallic threads introduced by him across the membranes of the eye, and which he leaves *in situ* during the time necessary.

On Progressive Myopia in Women.—M. Chibret stated that progressive myopia is very serious in women. It is necessary to order the use of spectacles appropriate to the various forms of myopia.

THERAPEUTICS.

The Employment of Carbolate of Soda in Nervous Affections of the Respiratory Passages.—M. Pernot stated that he had employed this agent successfully in spasmodic affections of the respiratory passages, such as whooping cough and influenza.

On the Treatment of Chronic Parenchymatous Metritis by Ignipuncture.—M. Courty, of Montpellier, had obtained excellent results in this disease, long thought incurable, by deep cauterisation of the neck of the uterus with small spherical cauteries terminating in a point of from one to three centimètres long.

On the Treatment of Coxalgia.—M. Ollier, of Lyons, passed in review the principal means recommended against coxalgia, viz., continuous extension; frequent movements producing the rupture of the attachments, and the resection of the head of the femur. Neither of these methods obtained M. Ollier's approval. He considered sudden extension and immobilisation as the two chief indications to be fulfilled in the majority of cases, associating with this treatment sea-air, and forbidding any thermal treatment.

Deformities of the Sole of the Foot, especially in Children, in Atrophic and Paralytic Affections of the Leg.—M. Onimus showed a cork sole, manufactured by M. Collin, intended to remedy these deformities.

On Paralysis of the Muscles of the Arm cured by Continuous Currents.—M. Dagrève related a case of paralysis consecutive on arthritis of the elbow, lasting two years, and which disappeared after three applications of electricity.

On the Caustic Properties of Bromide of Potassium and its use as an External Application.—In consequence of experiments on rabbits in which M. Peyraud of Libourne saw that the skin which had been affected by solution of bromide of potassium dried up at the end of some days, he thought that advantage might be taken of that escharotic property to destroy certain malignant and other tumours. In fact, in twenty-eight days he had destroyed to the pedicle, by daily applications of bromide of potassium, a canceroid fungous mass which had invaded two-thirds of the skin. M. Besnier cured, some time after, by the same means, a hypertrophic lichen of the leg, and avoided the amputation of the limb.

APPARATUS AND INSTRUMENTS.

New Pneumograph.—MM. Colrat and Rabatils's pneumograph differs from those already in use, inasmuch as it is able to indicate in an independent manner the movements of the right half and the left half of the thorax. Nevertheless, the inventors candidly stated that the applications of their study of unilateral diseases of the chest only yields incomplete results.

New Æsthesiometer with Isolating Points.—The terminal points of the new æsthesiometer of M. Manouvriez, jun., of Valenciennes, are made in ivory, and are a safeguard against the error produced by the conductivity of the old apparatus, which therefore easily place themselves in an equilibrium of temperature with the body.

New Apparatus for Fractures of the Lower Limbs.—According to the inventor, M. Fabrequettes, of Saint-Etienne, this apparatus, a modification of Bonnet's trough, offers the following advantages. Counter-extension is safe and efficacious. The reduction is gradual, and is performed without sudden concussions; coaptation is kept up in a certain manner; finally, the dressings are in no way interfered with, and the patient can sit up in bed.

HYGIENE.

On the Mortality of Young Children.—M. Dubert said that this must be attributed in some part to the ignorance of mothers, who very soon begin to give solid food to their suckling children. Some elementary notions of hygiene should be given to these ignorant mothers, and M. Dubert suggested that a short appendix, containing indispensable precepts on this subject, should be appended to prayer-books, missals, and religious books in general.

ACADEMY OF MEDICINE IN PARIS.

August 29. *Manifestations of Rheumatism or Gout in Calculous Patients after Operation.*—M. Courty read a memoir on this subject, in which he stated that besides the general accidents of all operations, and, besides the special accidents which depend on stone, purulent cystitis, urethritis, nephritis, albuminuria, uræmia, etc., diathetic accidents, attacks of gout or rheumatism, affections congeneric with gravel may yet be manifested as the consequence of operations for stone, which seem to be aroused or brought on, if not produced, by the concussion, the commotion or the shock, as it may be termed, of the operation itself, either by cutting or by lithotripsy.

August 12. *On a New Method for the Abortive Treatment of Anthrax.*—M. Jules Guérin read a note on this subject. Starting from the idea that the accidents constituting the accidental malignity of the anthrax are the result of the absorption of septic liquids contained in the form of this tumour, the indication consists in anticipating and neutralising the septic decomposition of the cores, and in stopping the decomposed matter on its way. The best means of realising this object is the application of a blister on the most inflamed zone of the anthrax. The blister should be large, and cut in the centre. If this proceeding be adopted at the first stage of the anthrax, this application has the effect of stopping accidents, of calming pain, of changing the consistence of the tumour, and of rendering it of a mild character and of easy enucleation, even without the help of the bistoury.

August 19. *On Heredity in the Production of Cerebral Hæmorrhage.*—M. Dieulafoy reported several examples which he had recently had the opportunity of observing, and in which heredity was evident. This heredity is as pronounced as that of pulmonary phthisis, for instance. Cerebral hæmorrhage appears in general at an advanced age; nevertheless, it sometimes freely strikes down many members of the same family at various periods of life; it is not even rare that in the same line a younger generation is attacked before an older one.

ACADEMY OF SCIENCES IN PARIS.

August 7. *Glycæmia.*—M. Claude Bernard demonstrated in a note, that glycæmia is the result of

a physiological function, that it takes its rise in the organism itself and not in alimentation. He also presented the comparative results which have been furnished by the examination of the blood taken from different parts of the body. In the general venous system the proportion of sugar is variable, but always inferior to that of the arterial blood. In the line of the arterial system, the blood contains a sensibly identical portion of sugar. M. Thénard pointed out that the results obtained in analysis of this kind are influenced by the operative method, according as the peculiar force, designated by M. Chevreuil under the name of capillary affinity, is destroyed or not. He has succeeded in neutralising that affinity by fifteen degrees of cold.

Bacteria.—M. Pasteur replied to Dr. Bastian's objections to his theory of fermentations. He maintains that boiled urine rendered alkaline by solid potash, no longer produces bacteria; that fresh urine, as it leaves the bladder, and saturated in the same way without preliminary boiling is likewise sterile.

The Dura Mater.—M. Bochefontaine presented a note on some peculiarities in the reflex movements brought on by mechanical excitation of the cranial dura mater. It is possible not only to provoke movements caused by pain, but also movements limited to the muscles of the face on the side corresponding to the portion excited. It appears as if these movements are due to the direct transmission of the excitement on the same side of the spinal marrow.

August 14. *Glycæmia*.—After having demonstrated that glycæmia cannot proceed from alimentation. M. Claude Bernard showed that it is connected with the glycogenetic function of the liver. He laid down the following positions. 1. The blood of the subhepatic veins is more saccharine than the arterial blood and the blood of the vena portæ; 2. The blood of the inferior vena cava becomes suddenly rich in sugar, before entering into the heart, at the level where the subhepatic veins pour out their contents.

Trephining.—M. Ollier read a memoir on trephining of the bones in the various forms of osteomyelitis. This operation should be reserved for cases in which the inflammatory nature of the lesion cannot be doubted. In the organic lesions of the bones, trephining may always act as an operation for *débridement*, but it would open the way to the most serious accidents; amputation of the limb, or ablation of the bone, are the only rational operations.

Athrepsia.—MM. J. Parrot and Albert Robin presented a memoir on the changes of the urine in the athrepsia of new-born children. The urine in athrepsia is always coloured from pale lemon colour to the deepest yellow, always odoriferous, frothy, flat or aromatic, always diminished in quantity, its density varies from 1009 to 1012.5. The reaction is always acid; the urea varies from 3.63 grammes per litre, and 1.22 grammes per kilogramme, weight 16.19 and 5.89 grammes. Uric acid, urochrome, and indigose are often increased, but the albumen, variable as to the epoch of its appearance, is never wanting in any patient; sugar is frequent. The chlorides are on an average from 3.09 grammes per litre, and from 1.28 grammes per kilogramme, phosphoric acid from 0.95 to 2.24 grammes. The approach of death is announced by the accentuation of all these specialities, and above all by the lowering of the quantity of

consecutive deposits of urate of soda, the augmentation of the uric acid, the albumen, etc. Diarrhoea is announced by a diminution in the quantity of the urine, and the appearance or increase of indigose. Anxiety, agitation, cries of anguish, are often in proportion to the diminution of the quantity, the augmentation of the uric acid, and the glycosuria. The diminution of the acidity, the somewhat elevated amount of the chlorides, and of the phosphoric acid, the small quantity of urea, and the light colour, announce that the child is still slightly nourished, and may be reckoned amongst the number of favourable symptoms if they are accompanied by a diminution of the albumen. Syndromata of the same order coincide with the rise of the sudden lowering of the temperature, great losses of weight, certain complications, etc.—MM. Polli and Pietra Santa claimed the priority of the antiseptic method set forth by M. Larrey, in the name of Dr. Minich.

REVIEWS.

A History of Asiatic Cholera. By C. MACNAMARA, F.C.U., Surgeon to the Westminster Hospital. London: 1876.

Mr. Macnamara's object in writing this book has been to convey to educated Englishmen important, and, so far as the subject admits of it, exact information on a matter which affects the well being of a vast number of their fellow creatures. We could wish that 'educated Englishmen' out of the medical profession could be induced to read what Mr. Macnamara has so well written; but we greatly doubt whether, until another cholera invasion of this country is imminent, many non-medical readers will be found to benefit by our author's labours. So long as cholera is at a distance from our shores, and confines its ravages to natives of other countries, or even to our own countrymen in India, the general public will leave the study of the history of cholera, which so much concerns us all, to professional students. When a steam-boiler in a man-of-war on our own coasts bursts and destroys and injures forty or fifty men, public sympathy is immediately and most justly awakened, and neither time, money, nor labour are grudged to trace out the cause of the accident with a view to prevention in the future. But an epidemic of cholera, starting from its endemic area in Lower Bengal, may sweep over India and destroy, as Mr. Macnamara says, 'on each occasion millions of human beings, many of them in the prime of life,' without exciting more notice than a few paragraphs in the daily journals.

In the work before us, Mr. Macnamara gives us clearly the history of the six great epidemic outbursts of cholera, which since 1819 have spread over the world. 'There is no great difficulty,' says our author, 'in tracing out the progress of the earlier epidemics of cholera over Europe and America, but of late years, in consequence of the more rapid communication established between India, Persia, and Russia, cholera has shown a tendency to localise itself beyond the confines of Hindostan, and so it has become impossible to follow each outburst of the disease from Western Europe back to its starting-point in Bengal. But this present difficulty makes it all the more important for us to study the earlier history of cholera, and by means of the knowledge thus ac-

quired, to examine its characteristic features where it has appeared under more complicated circumstances.'

The first chapter is devoted to a definition of cholera, and to the history of communication between India and Europe. Mr. Macnamara's definition of cholera is, in its main features, the same as that now accepted by the best authorities in Europe, and so ably developed by Simon—viz., that it is a disease which is capable of being communicated to persons in sound health, through the *dejecta* of patients suffering from this malady, and that drinking water, as first clearly shown by Snow, is the main channel by which the poison finds its way into the system, the *dejecta* of affected persons percolating through the soil in ill-constructed drains into wells or rivers from which drinking water is supplied. The propagation of the disease by various articles of diet in like manner contaminated, or by atmospheric impurity from air charged with exhalations from the 'choleraic forces,' from carrying the bodies of those who have died of the disease for burial, or washing or wearing linen soiled with the discharges of cholera patients. The important fact that the organic poison of cholera in a dried condition may retain its dangerous properties for a considerable time, and thus the disease be carried from one country to another, is also admitted. The manner in which cholera has thus been carried in the clothes of emigrants from infected localities in the centre of Europe, causing an outburst of the disease in a crowded ship in mid ocean, or, when opened after arrival, on the continent of America, as proved by the investigations of Dr. Woodworth, Marine Hospital Surgeon in New York, may be taken in illustration of this part of Mr. Macnamara's account of the way the disease is sometimes propagated. In fact the lesson inculcated, and as he believes proved, in this important work is, that cholera is disseminated from its endemic area by means of human intercourse, man carrying it with him from congregation to congregation.

Mr. Macnamara then gives in considerable detail the early trade routes between India and Europe. In the course of his observations on this point, our author goes a little out of his way to introduce some remarks drawn from his professional intercourse with the mothers and wives of the native inhabitants of Calcutta, on the perversion and moral corruption of the rising male generation of native society, arising from the rapid diffusion of European ideas, laws, and literature among them. We do not doubt that the lives of a not inconsiderable number of the educated native youths (Young Bengal) of Calcutta are very unlovely, not only in the eyes of those whose lives are spent in the zenana, but to all beholders. But surely our author is not simple enough to believe that Hindoo beliefs, ideas, and practises, still held sacred in zenanas, can stand before the culture, crude and imperfect as that may be, to which the minds of 'Young Bengal' are subjected in the schools and colleges established by the conquering race. Mr. Gladstone has well shown that no race with any pretension to civilisation has ever passed directly from one belief to another without passing through an intermediate stage—one of negation of all beliefs. This is the stage of transition through which the young men in Calcutta are now passing; it is, as we have said, most unlovely, and, we can well understand, very incomprehensible and abominable in the eyes of the Aryan wives and mothers, whose minds are little if at all touched by

contact with the new world of thought, life, and manners introduced by Europeans. While it is a melancholy fact that our vices are more easily imitated than our virtues by 'Young Bengal,' is it so certain that the morality inculcated in the zenana was so pure and elevated that we need, like Mr. Macnamara, think, as he appears to do, that the diffusion of European ideas, laws, religion, and morality is too great a price to pay for the loss of it, merely because the first effect of their introduction is not in some respects pleasing? Others as well as Mr. Macnamara have had as ample means of seeing zenana life, and its effects and influence on the minds of the young, without seeing cause to regret that it is giving way to a more robust and healthy training. For ages before the introduction of European ideas into the education of both sexes in India, zenana education had its own way; was the outcome such as to excite admiration or cause us to regret that it is passing away? We offer the rising generation of India something more than 'the heartless system of moral philosophy and ethics,' which Mr. Macnamara says 'is all we give in exchange' for the 'sacred obligations' of their own religion; we offer them a purer faith and a higher system of morals, and our hope and belief is that, the stage of transition passed, to which we have adverted, thousands will embrace both, and enter on a higher life and practise a purer morality than ever was taught in zenanas.

For the clear history of the various epidemics we must refer to the work itself, which is a store-house of important facts on all relating to the progress and geographical distribution of the disease. We are particularly pleased to see that the author devotes a chapter to the history of cholera prior to the year 1817. In this chapter, following the investigations of Dr. John Macpherson, the vulgar notion that this disease took its origin in that year is once more and effectually exploded.

There is an interesting chapter on the bearing of meteorological influences upon the spread of cholera. Mr. Macnamara thus expresses himself on the influence of the south-west monsoon, so much insisted on by those who advocate the views of Dr. Brydon. 'It seems to me that these facts are best explained as follows: when the south-west monsoon sets in over Bengal, the river Ganges becomes the great high road of traffic between the home of endemic cholera and the north-west provinces. After the cold season crops have been gathered in, and the monsoon has fairly begun to blow over Bengal, large fleets of country boats start on their journey from Calcutta, Dacca, and other emporiums of trade, for Patna, Benares, Allahabad, Mirzapore, and Cawnpore, which latter place they reach about August. A few of these boats sail up the Jumna as far as Agra, and even Delhi. The south-west monsoon, therefore, would appear to be the indirect cause of the dissemination of cholera over the country, in that it brings with it moisture, a necessary element for the development of the disease, but more especially because it is before this wind that the large fleets of country boats move up the Ganges, conveying men and goods from the home of endemic cholera to be disseminated over the upper provinces; a repetition of the old story, cholera progressing with naan along the great high roads upon which he travels, spreading no faster than he moves, and being generated in wet and hot weather.'

This valuable work concludes with an appendix

describing the characteristic features of Asiatic cholera, the term used by Mr. Macnamara throughout, and a description of the precautions best suited in the present state of knowledge to prevent its spread.
W. C. MACLEAN, M.D.

Traité Pratique des Maladies du Larynx, précédé d'un Traité complet de Laryngoscope. Par le Dr. CH. FAUVEL. Avec 144 figures dans le texte et 20 planches dont 7 en chromolithographie. Paris : Delahaye. 1876.

Practical Treatise on Diseases of the Larynx, preceded by a complete Treatise on the Laryngoscope. By Dr. CHARLES FAUVEL. With 144 woodcuts, seven chromo-lithographs, and thirteen other plates. Paris : 1876.

This important work of 900 pages is only the first part of the complete treatise. It deals with the laryngoscope and its accessory apparatus, with laryngoscopic surgery, with laryngeal polypi and cancer of the larynx. The second part, which is promised, will contain catarrhs, syphilis, phthisis, and paralysis, and will conclude with an article on rhinoscopy and diseases of the posterior nares. If all the subjects be treated with the amplitude which has been permitted with regard to benign and malignant growths, this work bids fair to be one of unusual dimensions. On analysing the volume before us, we find that 130 pages are taken up with a description of polyps and the instruments necessary to remove them, and that 400 pages are occupied with the clinical histories of 300 cases, which the author met with between the years 1862 and 1875. Rather more than 60 pages are devoted to the investigation of cancer, and 120 pages to the detailed description of thirty-seven cases of primary cancer of the larynx, which have come under the author's notice since 1862. The rest of the work consists of an excellent description of the laryngoscope, of the various kinds of illumination, of the art of laryngoscopy, and of the various instruments for applying remedies to the larynx.

It will be seen then that the work is, in fact, an elaborate monograph on growths in the larynx, and that the greater part is occupied with the description of those benign neoplasms which it is the delight of the laryngoscopist to eradicate. Dr. Fauvel now establishes by undoubted proofs that reputation for skill, which he has long enjoyed; for it appears that, out of 300 cases that have come under his notice, 233 submitted to operation, and of these there were 180 complete cures, forty-eight cases of marked improvement, and only five instances in which no benefit resulted. When it is remembered that, twenty years ago, a very large number of these patients would have died suffocated, and that many others would have undergone tracheotomy, it cannot be denied that the laryngoscope has furnished a most important means of defence against one class of 'ills that flesh is heir to.' We may perhaps congratulate the public, if not the laryngoscopists, in this country, that growths appear to be more common in France than in England or Germany. It is probable that, the moister climates of these last-named countries predisposing to catarrhs, the tendency of disease as regards the laryngeal mucous membrane may be more towards muco-purulent inflammations than to new formations.

To many readers, however, the section of the work devoted to cancer will prove the most interesting. Medical literature contains very few cases of primary

cancer of the larynx, and the detailed account of thirty-seven fresh cases cannot fail to be of considerable value. In nineteen cases the disease was encephaloid, sixteen were epitheliomatous, and two doubtful. Encephaloid cancer begins as a small, scarcely defined, and in no way characteristic tumour on one of the ventricular bands. In Dr. Fauvel's cases the left side of the larynx was far more frequently affected than the right, in both forms of cancer. Thus, in his thirty-seven cases, the disease commenced in twenty-six instances on the left side, and only seven times on the right side; in three the origin of the disease was uncertain, and in one case the epiglottis was the part attacked. Epithelioma is more easy to recognise in its early stages. It presents the appearance of a rapidly growing papilloma, which soon ulcerates and becomes covered with pus and mucus. As is usual in cancer, the greatest mortality took place in middle life and old age. Thus, thirty-seven patients were between forty and seventy, whilst there was only one patient who was under forty, and two over seventy. The greater disposition of the male sex to be affected with cancer of the larynx comes out very strongly in the author's cases, there being thirty-four men and only three women. Dr. Fauvel suggests that, in women afflicted with the cancerous diathesis, the uterus and mammae afford a more favourable nidus, and hence exercise a kind of protective influence on the larynx.

As regards the symptoms, the author thinks the voice, though often hoarse, is seldom completely extinguished, and this serves to distinguish it from laryngeal phthisis, in which disease, he says, the voice is generally altogether lost. Difficulty of respiration does not generally come on till long after hoarseness—a year often supervening between the inception of these symptoms. Dysphagia, which is rare in the early phases of primitive cancer of the larynx, generally supervenes towards the middle period of the disease, and increases till the patient is unable to swallow anything but liquids. Salivation was also a troublesome symptom in all Dr. Fauvel's cases. Pain, at first dull, but afterwards lancinating, and extending to the ears, orbit, and forehead, is almost always present. The characteristic odour, the disposition to repeated hæmorrhage and the glandular engorgement, complete the semeiology; but the author calls attention to the fact, that the cancerous complexion is often altogether absent—even in the case of patients who, having been tracheotomised, have survived for a considerable period. The author thinks that primitive cancer has little disposition to infect the system at large; but it must be borne in mind that he also admits that in a great many cases he could only obtain permission to examine the throat after death, and was not allowed to make a complete necropsy. It is sometimes difficult to distinguish syphilis and cancer; in the former disease, however, the malady is simply destructive, and there is an absence of any attempt at new formations. So difficult, however, is it to distinguish between the two diseases, that in all cases the author submits the patient to a course of antisyphilitic treatment.

Perhaps the most important and interesting portion of this article has reference to the termination of the disease and the influence of tracheotomy. The following are the author's statistics.

'In seven non-tracheotomised patients suffering from encephaloid disease, the mean duration of life was three years.

'In eight tracheotomised patients with encephaloid disease, the mean duration of life was three years and nine months.

'In six non-tracheotomised patients, with epithelioma, the mean duration of life was one year and eleven months.

'In seven tracheotomised patients with epithelioma, the mean duration of life was four years.'

It will be seen then that epithelioma of the larynx, if left to itself, terminates more quickly than encephaloid disease; and on the other hand that tracheotomy prolongs life for a greater period in epithelioma than in encephaloid disease. In the last named disease the prolongation of life presented a mean of nine months, whilst in epithelioma it was two years and a month. 'Tracheotomy thus always prolongs the patient's life.' As regards treatment, as already remarked, Dr. Fauvel treats all his cases with antisyphilitic remedies, on the possibility of the disease being venereal. Of course if the disease be so advanced that its nature is evident the author does not adopt the course indicated, but otherwise that is his plan. He uses mercurial frictions after Sigmund's plan, iodide of mercury, and in a few cases has employed mercury hypodermically. Whilst giving mercury he administers large doses of iodide of potassium, hot air baths, and Zittman's *tisane*. If this treatment do not arrest the disease, there is nothing to do but attend to the symptoms, give subcutaneous injections of opium, carbolic acid inhalations to diminish fetor, and atomised solutions of tannin in case of hæmorrhage. The author recommends tracheotomy as the grand surgical palliative, and speaks unfavourably of extirpation of the larynx. The article concludes with a thoughtful section on laryngeal cancer in relation to general cancer.

We have attempted to give a slight sketch of this most valuable work, which throughout is admirably illustrated. It is the most important book which has appeared since the invention of the laryngoscope, and reflects the greatest credit on the author and on the surgical literature of France.

Études Histologiques sur le Labyrinthe Membraneux, et plus spécialement sur le Limaçon chez les Reptiles et les Oiseaux. Par PAUL MEYER. Paris : 1876.

There are few researches in Histology which necessitate the exercise of so much patience, perseverance, and skill, as those required for the study of the delicate structures of the internal ear. This very delicacy of the soft tissues and the extreme hardness of the encasing bone, naturally present difficulties not to be met with in any other part of the whole body. It is therefore with a feeling of no common interest that we take up such a work as the one before us.

The author presents us with a careful *résumé* of the previous researches into the structure of the membranous labyrinth of birds and reptiles, and adds the results of his own personal labours. In considering this structure, as a whole, he follows the lead of Hasse, and divides it into *pars superior* and *pars inferior*; the former, comprising the semicircular canals and utricle, does not alter materially in proceeding up the animal scale; whereas the latter, including the sacculus and ductus cochleæ, makes regular progressive changes as the scale is traced from amphibians to reptiles, and then on to birds. This development of the *pars inferior* ne-

cessitates a very detailed account of its component parts in the several classes, especially as regards the cochlea.

In treating of the two points which, beyond all others, are of interest to the histologist, namely, the mode of termination of the nerves in the cochlea and in the acoustic areas of the vestibule and semicircular canals, M. Paul Meyer quotes the writings of Max Schultze, Kölliker, Hasse, Rüdinger, Waldeyer, Ebner and others; and, after explaining concisely their several views, he proceeds to lay before the reader his own results and conclusions. He tells us that the nerve-epithelium, which contains the terminal distribution of the nerves in the vestibule and ampulla, consists of a deep layer of nuclei, very distinct, surrounded by and embedded in a protoplasmic mass, and above this a superficial layer of cylindrical ciliated cells. The cylindrical cells contain an oval nucleus towards their lower end, which tapers off, while their free upper end presents a cuticular surface from which projects a tuft of cilia. The nerves lose their white substance before entering this nerve-epithelium, and the filaments form networks around the nuclei of the deep layer and between the cylindrical cells, some of the filaments entering these latter cells at their lower extremity.

The acoustic papilla of the cochlea, which corresponds to the organ of Corti in the mammal, he describes as consisting of a superficial layer of cylindrical ciliated cells, very similar to those just alluded to, and below these a thick granular mass which lies on the *membrana basilaris*. This mass contains numerous rounded nuclei irregularly disposed, and a network of nerve-filaments, connected both with these nuclei and with the ciliated cells.

Having given a description of the structure, he proceeds to the difficult question of their function, and enters into the controversy on the cochlea which has been engaging the attention both of the physiologist and the physicist. He first quotes Helmholtz's theory, namely, that the rods of Corti constitute the mechanical arrangement for appreciating the pitch of sounds; then that of Heusen, which gives to the *membrana basilaris* the same function; and finally that of Hasse, who regards the *membrana tectoria* in the same light.

He objects to the theory of Helmholtz on the grounds : firstly, that the rods of the two rows do not correspond so as to form complete arches; secondly, that the nerves do not enter the rods themselves; and lastly, that there are no rods in the bird's cochlea. Against the theory of Heusen several very evident objections are raised, one of which is at once fatal to the view, namely, that in some parts of the bird's cochlea the organ of Corti has no corresponding *membrana basilaris* to lie upon. The author has still less difficulty in dealing with the idea of Hasse, who regards the *membrana tectoria*, a soft mucous mass, as the mechanical appreciator. He therefore scouts altogether the idea of any mechanical explanation, and gives it as his belief that the ciliated cells are influenced directly by the sound-waves. By discarding all mechanical explanations in this manner, he overlooks, in our opinion, several important points. It has been shown by Pritchard, who, he admits, still upholds the original views of Helmholtz in a modified form, that the rods and various component parts of the organ of Corti in mammals are regularly graduated in passing up the spiral of the cochlea and for this reason the cochlea as a whole is undoubtedly

far more perfect in the mammal than in the bird ; therefore we ought not to be surprised surely at finding the addition of an extra aid to the function in the form of rods. Bearing this in mind, the non-existence of rods in the bird's cochlea, does not disprove their mechanical use, seeing that there are two factors to be considered in the appreciating of sounds ; firstly, the apparatus, or in other words, the ear ; and secondly the brain itself. And as no one would suppose that there is any structural difference between the cochlea of what is termed a good or bad musical ear in man, so it is possible, we hold, that the nightingale makes up for its less perfect apparatus by having a brain very sensitive to musical influences.

The author concludes his work by giving some valuable details as to the methods of preparing these delicate structures for examination under the microscope. Taken as a whole, the book is certainly the most complete and comprehensive account of the subject yet published, and we can confidently recommend it to all those specially interested in this branch of histology.

The Cause and Treatment of Rickets. By NORMAN MOORE, M.D., Warden of the College of St. Bartholomew's Hospital. London : Bradbury, Agnew, & Co. 1876.

This pamphlet, which is a thesis for the degree of M.D. in the University of Cambridge, contains some valuable observations upon the etiology of the affection. A table of 200 cases is given, where the principal points in connection with this are exhibited. Thus, as regards suckling, it appears that 40 never received the breast, 23 were weaned at or under the age of seven months, 29 between eight and eleven months, 70 between twelve and sixteen months, and 22 over this. Allowing for 15 cases in which the age is not stated, it follows that 89 per cent. were either weaned at an improper time or never had the breast at all. Farinaceous food was prematurely administered to about one-half the cases : thus—61 commenced it at birth, 32 under the fourth month, 5 between the fourth and sixth month, and 6 at six months. The disease appeared to have no relation to the age or health of the parents. Of 42 cases taken at random, 23 were either first or second children. The date of the commencement of the disease, always difficult to fix, was determined with some degree of certainty in 10 cases. In these the average age was thirteen months, the limit being respectively ten weeks and twenty-two months. Other points worthy of notice was that wasting was present in only 8 ; dentition was almost universally retarded ; intelligence was about normal ; cranio-tabes was never detected. Further, every *post mortem* examination showed a projection above and below each in vertebral substance. The remarks on treatment do little more than strengthen one's faith in cod-liver oil.

The paper is well worth the attention of all interested in children's diseases. It is pleasantly written, and shows indications of considerable erudition. It has the unusual feature of a Gaelic prologue.

On Port-Wine Mark and its Obliteration without Scar. By BALMANNO SQUIRE, M.B. London : Churchill. 1876.

Mr. Squire's treatment of nævus consists in freezing the part by ether spray, scratching it with

an ordinary cataract needle in parallel lines, placing a piece of blotting paper on it before it thaws, and pressing the blotting-paper firmly on the scratched skin for five minutes. If the operation requires to be repeated, the scratches are made transverse to the direction of those made the first time.

G. THIN, M.D.

RECENT FRENCH BOOKS.

Published by A. Delahaye & Co.

- De l'influence des émotions morales sur le développement des affections cutanées, par le docteur Meyer, in-8. Prix : 1 fr. 50.
- Étude sur le traitement des métrorrhagies en général et spécialement sur les cautérisations intra-utérines, par le docteur Devins, in-8. Prix : 2 fr.
- De l'épididymite syphilitique précédée de quelques considérations sur les périodes secondaires et tertiaires, par le docteur Balme, in-8 de 86 pages. Prix : 2 fr. 50.
- De l'intelligence, par M. H. Taine. Analyse par le docteur Ch. Féa, in-8. Prix : 2 fr.
- De la lymphadénite péri-utérine (phlegmon des ligaments larges), historique et pathogénie, par le docteur Auger, in-8. Prix : 2 fr.
- De la splénotomie chez l'homme avec une étude sur la physiologie de la rate, d'après un récent mémoire de M. Ch. Robin, et une nouvelle observation de splénotomie pratiquée avec succès par M. le docteur Péan (1876), par le docteur Barrault, in-8. Prix : 2 fr.
- Étude sur les hôpitaux et les maternités, par le docteur J. Felix, in-8. Prix : 2 fr.
- Chirurgie utérine. De la rétroversion et de la rétroflexion de l'utérus, de leurs traitements, par le docteur Chammard, in-8 de 84 pages. Prix : 2 fr.
- Recherches géologiques, botaniques et statistiques, sur l'impaludisme dans les dombes, et le miasme paludéen, par le docteur Magnin, in-8 avec une planche. Prix : 3 fr.
- Contribution à l'étude des éruptions de la conjonctive, par le docteur Savoy, in-8. Prix : 2 fr.
- Étude sur les troubles de l'intelligence, des penchants, de la sensibilité et de la motilité chez les épileptiques, par le docteur Pivion, in-8. Prix : 1 fr. 50.
- Des manifestations du rhumatisme sur l'urèthre et la vessie, par le docteur Guillard, in-8. Prix 1 fr. 50.
- De la pupille. Anatomie, physiologie, sémiologie, par le docteur Drouin, 1 vol. in-8, avec fig. dans le texte. Prix : 7 fr.
- Du rhumatisme pendant la grossesse, par le docteur Tison, in-8. Prix : 1 fr. 50.
- Essai sur les angines rhumatismales et gouteuses, par le docteur Logoanèse, in-8. Prix : 1 fr. 50.
- Des bains de mer chez les enfants, par le docteur Brochard, 2e édit., 1 vol. in-12. Prix : 2 fr. 50.
- Des affections de la cloison des fosses nasales, par le docteur Casabianca, in-8. Prix : 2 fr.
- Étude clinique sur deux cas de goutte saturnine, par le docteur Halma-Grand. In-8, avec 2 planches. Prix : 2 fr.
- Compendium der Thermo-thérapie (Wasserkur), par le docteur J. Czerwinski. 1 vol. in-8.
- L'introduction du système métrique dans l'ophtalmologie, par le docteur Laudolt. In-8, avec figures dans le texte. Prix : 1 fr. 50.
- Des paralyses traumatiques des membres inférieurs consécutives à l'accouchement laborieux, par le docteur Lefebvre. In-8. Prix : 1 fr. 50.
- Considérations générales sur les hydrocèles vaginales de l'adulte, par le docteur Ramos de Fonseca. In-8. Prix : 1 fr. 50.
- Étude sur la transmission des bruits respiratoires dans les grands épanchements pleurétiques, par le docteur Féa. In-8. Prix : 1 fr. 50.
- Des tumeurs hypertrophiques et vasculaires de l'urèthre chez la femme, suivies d'un Appendice sur les kystes du méat par le docteur Mouton. In-8. Prix : 1 fr. 50.
- Étude sur le mouvement de désassimilation chez le vieillard, par le docteur Roche. In-8. Prix : 1 fr. 50.
- Du traitement topique de l'endométrite à l'aide du graphidomètre, ou pinceau utérin, par le docteur Ménière (d'Angers). In-8. Prix : 50 c.

Published by G. Masson.

Recherches physiologiques sur l'innervation du cœur, par le docteur Léop.-G.-C.-S. Mios. In-8 de 138 pages. Prix : 3 fr.

De l'emploi du vésicatoire dans la pleurésie aiguë. Indication, modes d'action, valeur de ce moyen de traitement, par le docteur J. Besnier.

Published by J.-B. Baillière.

Précis d'opérations de chirurgie, par le docteur J. Chauvel, médecin-major, agrégé de médecine opératoire au Val-de-Grâce, avec figures dessinées par le docteur E. Charvot.

Étude sur une forme de cirrhose hypertrophique du foie, par le docteur Victor Hanot, lauréat de la Faculté. Prix : 4 fr.

Traité thérapeutique médicale, ou Guide pour l'application des principaux modes de médication à l'indication thérapeutique et au traitement des maladies, par le docteur A. Ferrand, médecin des hôpitaux. Un volume in-18 jésus de 800 pages. Cartonné : 8 fr.

Published by H. Lammereyns.

Traitement de la métrite interne, par T. Gallard, médecin de l'hôpital de la Pitié. Paris, 1876. Prix : 2 fr. 25.

NEW SCHOOL OF ANATOMY, PHYSIOLOGY, AND OPERATIVE SURGERY.

Mr. Thomas Cooke, F.R.C.S., Senior Assistant Surgeon to the Westminster Hospital, has opened a Preparatory Medical School in connection with his School of Anatomy, the object of which is to instruct young men in both the practice and science of medicine. The intention of this school is that intending medical students shall avail themselves of the excellent practical teaching provided by Mr. Cooke, and his assistants, Mr. George Brown and Mr. Edward Aveling, before joining a hospital. It is reasonably assumed that attendance at a practical establishment of this description would familiarise the student with the subjects he will have to study more in detail in his hospital curriculum, and will give him a decided advantage over the youth who goes straight from school to a hospital course.

The subjects taught at Mr. Cooke's school are anatomy and physiology, *materia medica*, botany and chemistry, and the principles of medicine, surgery, and obstetrics. The time spent in this school will count to the extent of one year or eighteen months as part of the curriculum required by the Royal College of Surgeons of England, and other examining bodies. As an useful preliminary therefore to the regular hospital curriculum, Mr. Cooke's school is highly to be commended as a most useful introductory course.

MISCELLANY.

A NEW hospital, on the plan of isolated pavilions, to contain three hundred beds, is being built in the twentieth *arrondissement* of Paris.

M. LEGUEST has been appointed a Commander, and Professor Germain Sée, of the Faculty of Medicine in Paris, an officer of the Legion of Honour.

THE University of Heidelberg, as well as medical science and practice, has recently sustained a great loss in the death of Dr. Simon, for fifty-three years a professor of surgery therein and a skilful operator.

DR. JOSEPH CARSON, for forty years professor of *materia medica* in the medical department of the University of Pennsylvania, has resigned his position on account of ill health.

IN a recent discussion on the budget in the Chamber of Deputies in Paris, M. Liouville proposed that the salaries of the Professors in the Faculties of Medicine and Science in Paris should be raised from 13,000 to 15,000 francs (520*l.* to 600*l.*). The proposal was supported by M. Cornil, but was not adopted.

THE LANGUAGE OF ANTS.—According to Professor Landois, of Freiburg, ants possess a vocal speech inappreciable by human ears. They are thus enabled to exercise those higher mental faculties to which they owe the development of the advanced social organisation exhibited by them in their communities.

THE Medical Department of the University of Pennsylvania has been investigating the matter of reform in medical education. It decides that a high preliminary examination and a graded three years' course are excellent things, but they are impractical in said University until sufficient funds have been raised to endow the various professorial chairs.

NEW MEDICAL JOURNALS IN OHIO.—Two new medical journals appeared simultaneously in Columbus on June 1: the *Ohio Medical and Surgical Journal*, edited by Professor J. H. Pooley, and the *Ohio Medical Recorder*, edited by Drs. J. W. Hamilton and J. F. Baldwin. Both are to be published monthly. Dr. Pooley's first issue contains ninety-six pages of reading matter, including several original papers, clinical records, reviews, etc. The *Recorder* has forty-eight pages, but uses a smaller type.

DR. FRANK BULLER has been appointed oculist and aurist to the Montreal General Hospital. The appointment was made upon the unanimous recommendation of the medical board, who were of opinion, that from the long experience of Dr. Buller in the Moorfields Hospital and on the continent, his assistance in the work in the hospital would be a great advantage both to the public and to themselves. Dr. Buller has already delivered a short course of extra-academical lectures on ophthalmology in connection with the summer session of McGill College.

RELIGION AND HYGIENE.—An old adage already proclaims the near approximation of cleanliness to godliness; it is left to a French doctor, M. Dubert, to suggest the same union between hygiene and holiness. In a paper read by him at a recent scientific congress on the Mortality of Young Children, he attributes this deplorable result in great measure to the ignorance of the mothers, who feed their infants in an improper manner. To remedy this fatal ignorance, M. Dubert makes the very practical suggestion that a short appendix containing elementary precepts on feeding and rearing infants, should be printed at the end of prayer-books, missals, and religious books generally.

CLINICAL INSTRUCTION IN MENTAL DISEASES IN PARIS.—M. de Marcère, the French Minister of the Interior, has, on the application of MM. Liouville and Robin, sanctioned the re-establishment of clinical lectures in the St. Anne, Salpêtrière, and Bicêtre Asylums, which were suppressed two years ago by the Prefect of the Seine. The closure of those institutions against clinical instruction excited at the time strong remonstrances from the French medical press, but without effect. We are glad to hear of the removal of the restriction, which must have had a very injurious influence on an important branch of professional education.

MODERN ADVANTAGES.—Archæological researches sometimes help to remind us of the boons of modern civilisation. Flickiger finds from reference to the tariff of the city of Nordhausen near Göttingen, that in 1657 tea—*Herba theæ*—was there a pharmaceutical article. It also occurs in the tariff of Liegnitz, in Silesia, in 1662, under its Chinese name, *Herba Shak*; it then commanded a most extraordinary price—namely, fifteen florins a handful. Cacao seeds and chocolate were to be found with German pharmacutists as early as 1656 and 1683 ('Doc,' pp. 53 and 69), and Coffee—'*Bon Cofi Grana*'—in 1683 in the pharmaceutical office of the court of Dresden.

THE BOYLSTON MEDICAL PRIZES.—Dr. W. Gill Wylie, of New York, has received the Boylston prize of 300 dollars, for an essay on 'Civil Hospital Construction,' and Dr. Mary Putnam Jacobi the prize of 200 dollars for an essay on the subject, 'Do women require mental and bodily rest during menstruation?' The questions proposed for next year are as follows: (1.) Are epidemics and so-called contagious diseases necessarily dependent upon material agencies, acting through the stomach or otherwise? (2.) Athletic sports, training, violent exercises, etc., as now practised by young men; their temporary or permanent influence on the health. The following are the questions proposed for 1878. (1.) Antiseptic treatment. What are its essential details? How are they best carried out in practical form? (2.) Diphtheria: its causes, diagnosis, and treatment.

HYGIENE IN THE RUSSIAN SCHOOLS OF MEDICINE.—The Russian Government exhibited at the Brussels Exhibition for the Saving of Life, some specimens of the models used for illustrating hygiene in Russian schools. The composition of the human body is shown by a series of jars, which contain separately the approximate quantity of the substances that go to make up the human frame. First, a large glass barrel, holding about 50 kilogrammes of water, is shown, and this forms 72 per cent. of the total ingredients. In smaller vessels are the gelatine, the albumen, the fat, the phosphate and carbonate of lime, and divers salts which help to constitute the mortal part of man. The pupils having thus learnt of what they are made, are told how to maintain the natural balance. They are taught of what various kinds of food consist. In a glass tube there is exhibited so much water, so much albumen, so much cellulose, sugar, starch, etc., and the outside is marked 'cabbage,' or 'cucumber.' There are jars of black bullock's blood to be shaken up with air in order to show how oxygen reddens and revives the blood in the lungs. There are also jars with lime-water and a breathing tube so that the pupil can breathe in and see the water curdle at the action of the carbonic acid. Another breathing apparatus experiment shows that this carbonic acid is fatal to the flame of a taper as it would be to human life, and as it ultimately is to the unhappy dogs periodically thrust for the instruction of the traveller into the Grotto del Cane, near the Avernian lake in Southern Italy. By another of the Russian models a striking sanitary lesson is taught. The exhibitor breathes into one side of a box, which is divided into two by a strong brick wall. The other side of the box is tapped by a tube which ends just above the flame of a candle. When the exhibitor has poured carbonic acid from his breath into one side of the box it passes through the bricks, and coming through the tube falls down (being heavier than air) upon the candle and extinguishes it. Thus the learner is taught that noxious gases are not kept out by brick walls.

RUDOLPH VIRCHOW.—A writer in the *New York Medical Record* gives the following account of Rudolph Virchow, the eminent German pathologist. Virchow is eminent in the political as well as in the medical line. His tenets, at variance with those of the Chancellor of the Empire, and in sympathy with that large radical party of Germany whose ideal may be seen in nearly every European government of to-day, call it by whatever name you please, liberalism, radicalism, or conservatism, have developed an iron will and a bitter sarcasm which make him a species of terror to the government. In other ways he is remarkable. Always late at his lecture, and appearing now but twice a week, he has time enough, apparently, for the numerous demands made upon him. On the same day he is to be seen from nine to eleven A.M. in the Pathologisches Institut, demonstrating, with a vast array of material, cellular pathology; and from five to seven or eight P.M. in the Chamber of Deputies of Prussia, of which he was recently elected vice-president, over the nomination of his predecessor; later, hard at work in the Royal Geographical Society. Besides these official appointments he is chief editor of a popular journal of science, contributes occa-

sionally an article to scientific bodies, and gives popular lectures in the winter. It may not be generally known that in the revolution of 1848 he fought as a common soldier behind the trenches; that he was forced to abandon his professorship here on account of his political doctrines, and that he went to Würzburg, where the book of his life—the exposition of the cellular pathology—was written; that the government was obliged to recall him to his department in the university on account of the urgent demand of scientific men, who recognised his worth by the new book; that later Prince Bismarck challenged him to a duel, whose acceptance he had the courage to refuse; these and many other events of his life make Rudolph Virchow one of the most conspicuous men of the day in Germany. It is said that he regrets the comment not long ago made about him, that he was a severe critic as to the merits of other men. Virchow is poor, lives on the second flight, and complains that he cannot live as a gentleman of his standing should.

THE VIVISECTION BILL.—In Dr. McKendrick's opening address in the department of Anatomy and Physiology, Section of Biology, at the meeting in Glasgow of the British Association for the Advancement of Science, he made the following remarks: 'These sciences present different views of the same great system of truth. Anatomy is the science of organic form, while physiology is that of organic function. The kindred science of physiology has for its object the elucidation of function, and it has in addition to the methods of anatomy—viz., dissection, description, and comparison—those of pathological observation and experimentation. It is confessedly the science most difficult of all to prosecute. In the further prosecution of physiology as a physical science, which it really is, experimental inquiry with the aid of precise instruments, and the facts derived from the observation of the course and effects of disease, seem to me to be the two lines of evidence which will in future weigh with us in coming to just conclusions. I make these remarks regarding the value of the experimental method in physiology because we cannot forget the attempt which has recently been made to restrict us in the use of this important aid in prosecuting our science. I shall not enter again upon the controversy which has raged in this country regarding experiments upon animals, because by the passing of the bill a practical solution of the question has been arrived at in the meantime, and it now becomes us as good citizens to do all in our power to carry out the provisions of the Act and give it a fair trial. I may say, however, that I always recognised the right of the public to agitate on this question if they considered unnecessary cruelty was being perpetrated. I hope the day will never come when tales of suffering inflicted either on man or beast would be heard by us with calm indifference. It was not wise, therefore, to meet this agitation with contempt and scorn for the ignorance of those who carried it on, and it seems to me that the appointment of a Royal Commission to investigate the facts of the case was the best thing that could have been done by the government. The commission was composed of men likely by character and previous training to ascertain the truth. No one can read the evidence in the blue-book and the report founded thereon without coming to the conclusion that the case of those who raised the outcry against physiologists in this country completely broke down. On considering this report, the government brought in a bill, certain of the provisions of which seemed not only oppressive to physiologists, but were calculated, if carried into law, to impede the progress of science. The members of the medical profession, who knew the value of the experimental method in physiological research, and who were painfully conscious of the many imperfections of the art due to the want of knowledge, were now aroused, and that aided the physiologists of the country in making representations to the government which were favourably received, and which led to important modifications in the bill. That bill has now passed into law, and I appeal to our opponents to desist from further agitation.'

The London Medical Record.

Authors of Papers, Theses, &c., will assist in the preparation of summaries by our reporters, by forwarding separate copies of their works.

BRUGNOLI ON ANOREXIA.

The sixth volume (third series) of the *Memorie dell' Accademia delle Scienze dell' Istituto di Bologna* contains an article on anorexia by Professor Brugnoli, of which the following is an abridged translation.

Anorexia, the morbid condition which consists in the want of appetite for food, and even in complete aversion, was formerly considered as a disease in itself and well described, but is now regarded only as a symptom. It is, in fact, often enough met with as a constant symptom in all febrile diseases, and in very many of those which have taken seat in the stomach; it is often an accidental symptom in cases of disease of the brain and of the nervous system, of chlorosis, and of many diseases of the urinary organs. It is true that it sometimes prevails to such an extent as to attract special attention in the form of protracted fasting, in cases of hysteria and nervous affections of organic life. Many cases have indeed been recorded of protracted fasting without detriment to the strength or to nutrition; such cases have been recorded by Haller, Beccari, and Vallen- zasca; and Dr. Brugnoli himself has related a case of fasting during fifty days in his essay on the therapeutic use of nux vomica. But, in all these cases, the singularity consists in the long want of alimentation without a corresponding impairment of nutrition. And in examining the collection of symptoms observed, it is plainly seen that the inability to take part is an epiphenomenon, a symptom of a complex neurosis, of altered innervation of a part of the nervous system, and especially of that which presides over the functions of organic life. To these symptoms are frequently added others indicating psychical changes, and affections of sensation or of motion.

But cases of anorexia without other symptoms than the results which may be expected to attend the want of nutriment, are very rare. Dr. Brugnoli had not met with such a case in his own practice, nor in the recorded observations of others. Within a short space of time, however, he has met with two cases, in which the aversion to food, amounting almost to inability to take into the stomach, was the sole morbid symptom; it continued about two years, and ended fatally. The cases are as follows.

CASE 1.—The subject of this case was a young lady belonging to a noble family in Bologna, who had enjoyed good health up to her sixteenth year. Her parents were healthy, and there was no suspicion of hereditary disease, beyond a tendency to disorder of the stomach in the father's family. She first menstruated at the age of fourteen; and at that time, as regarded development, she had the appearance of a girl eighteen years of age. She did not habitually eat much, and preferred broths and soups in abun-

dance, to meat. When she was nearly seventeen years old, her parents observed that she ate less food than usual; she no longer took meat, or any other nutritious food, except soup, of which the quantity was less than usual. This was attributed to a false alarm of thieves in the house which the family received late one night, but the patient declared that she had not been affected by it. On careful examination no structural change could be detected, nor was any other function altered; deglutition was free, the food when it reached the stomach was digested regularly without trouble or pain, defecation was normal, and menstruation was regular; the urine, however, was rather abundant, and she had much thirst. These two circumstances led to a suspicion of diabetes, which, was, however, dissipated by examination of the urine several times in the course of her illness. During several months, nutrition and muscular force were not much affected, although the disease increased in spite of various medicines. At first, with the view of combating catarrhal gastritis, the remedies administered were alkalis, Vichy water, lime-water, nux vomica, and opium in various forms; but all without avail. At dinner time, when urged by the family to eat, she would put food in her mouth and chew it, and then declare that she could not swallow it, or do so with great effort. Dr. Brugnoli several times passed the œsophageal sound, but never found any signs of stricture. After consultation with Professor Roncati, it was determined to treat the case as one of dyspepsia, and lemonade with hydrochloric acid, pepsin, and various remedies to improve digestion were used, but without any improvement. Other remedies were also tried; but although the treatment ordered was steadily carried out by the patient, the disorder continued to make slow progress, and interference with nutrition became evident in the form of disappearance of the fat from the muscles of the neck and face. Thus matters went on for more than a year, and still sufficient muscular strength remained to enable the patient to take long walks; the catamenia, however, ceased. It was imagined by some that there was erotic disorder; but no sign of this could be detected, and the girl herself declared that her inclination was for the cloister. After some time, she entered a Dominican convent in Rome, where a sister already was. She bore the journey well. In Rome, she was placed under the care of Professor Rudel, who finding no visceral alterations, hoped that with change of climate and mode of living, and with new moral impressions, the chain of phenomena of disordered innervation would be broken and a cure effected. She continued, however, to lose flesh and strength, and died about three months after her arrival in Rome.

CASE 2.—Annetta M. was born towards the end of 1852 of healthy and robust parents; her mother, however, had in her fifteenth year a sudden and dangerous attack of what appears to have been meningeal hæmorrhage. Her childhood was healthy; she had on one occasion a glandular swelling of the neck, probably of traumatic origin; and there was no reason to suspect scrofula or other constitutional vice. At the age of fourteen, she first menstruated; and was then developed beyond the common. She was now placed in a college, where she grew even more than before, although she adapted herself to the regular mode of living. She had, however, an attack of rheumatic fever, in consequence of being subjected to changes

of temperature during dramatic performances. On leaving the college she appeared in florid health, and was remarkably tall. From her infancy she had been accustomed to eat much and often, especially bread; she took food five or six times in a day. This, however, was attributed to her large growth. This condition continued till her twenty-first year, when, in July, 1873, a remarkable diminution in the amount of her food was observed. She did not complain of pain or trouble, but sometimes said that she had a sensation of tension from the pharynx to the stomach; this sensation, however, she had formerly felt on other occasions, and had removed it by eating. But she now said that she did not feel hunger, and that she could not eat because the food *did not go down*. This phenomenon lasted for seventeen months, up to the time of her death; it sometimes, however, disappeared for a few days. This generally happened either before the appearance of the catamenia or immediately afterwards. The hopes then raised, however, did not last more than three days. A curious phenomenon was that she sometimes awoke in the course of the night, feeling as if she could eat freely, and ate abundantly, even things difficult of digestion, without feeling any trouble; but the next morning the event would be forgotten by her as if it had been a dream. For more than ten months there was no other symptom than inability to take food into her stomach, and steadily increasing loss of flesh. About June, 1874, menstruation ceased; she had erratic febrile attacks in the evening, and there was some dry cough. As time passed on, the febrile attacks became more marked; in fact, during the whole day there was a slow febricula, and a careful examination of her chest detected some coarse respiration in parts, which gave rise to the idea that there might be acute miliary tuberculosis. Some small white spots like miliary tubercle were observed on the arches of the palate and the posterior wall of the pharynx. The patient died on November 20, with all the symptoms of the asphyxial form of pulmonary consumption.

In the treatment of this case, the object sought was to modify the conditions of the stomach; and among the remedies used were bicarbonate of soda, magnesia, lime-water, calomel, opium, nux vomica, bromide of potassium, revulsives, iodide of potassium, arsenic, sulphites of alkalies, and Porretta-water. None of these, however, had any effect.

In commenting on these cases, Professor Brugnoli remarks that no one would doubt that in both instances death was the result of the insufficient quantity of food introduced into the stomach, in consequence of which the tissue-changes were interfered with. He continues:

But the second at least of the cases succumbed to a supervening disease, a sequel rather than a complication—acute miliary tubercle. And even if Buhl's theory of its origin from a local focus of infection be generally true (and observations in its favour are increasing in number), there are still cases where, in spite of most minute research, no focus can be found to which the origin of the infection can be traced. I have several times seen acute miliary tubercle develop and run a rapid course after a prolonged fright, in individuals who had shown no signs of having foci of suppuration of any kind, and in whom none were found at the necropsy. I am hence of opinion that a perversion of the blood-making process, whether through the influence of altered innervation or of

insufficient nutrition, may give rise to a special diathesis; an alteration of the blood of such a nature as to cause the formation of grey tubercle. The idea that deficient nutrition was the cause of the tuberculosis is supported by the observation of alienists, that in refusal to take food on the part of the insane, when forced alimentation cannot be perfectly carried out, the cases end in acute miliary tuberculosis.

Passing to the consideration of the anorexia, it is certain that the idea of its having been symptomatic of disease of the stomach must be excluded. The absence of pain and of interference with digestion, the results of examination of the epigastrium, the freedom from vomiting, all proved this; moreover, however severe a disease of the stomach might have been, such as cancer, or degeneration of the muscular fibres, it would not have produced such marked anorexia, nor would this have been the only symptom.

It is then manifest that the difficulty of taking food arose from a disturbance of the functions which make up the act of mastication and deglutition. It was not disgust at food that prevented the patients from eating; they took food into the mouth without aversion, but the difficulty arose when they were about to transpose it to the pharyngo-œsophageal canal. As has already been observed, the description of this symptom was so distinct that I was induced to make an examination with the œsophageal bougie in order to exclude all idea of stricture; besides, on inviting the patient to eat in my presence, the first morsels went down readily, but very soon she declared that this could no longer be done, so great was the resistance.

In considering the appetite for food, and the pleasant sensation experienced in eating, it seems to me that it may be divided into two parts; first, when the morsel is formed in the mouth, and we make it pass over the nervous papillæ of the tongue and oral cavity; second, when it is propelled into the throat. These two forms of sensation appear to me so different that they should be kept separate. We see in fact some individuals who feel the greatest pleasure in slowly tasting the food in the mouth, retaining it there for a long time; whilst others feel so much pleasure in swallowing, that they do it so eagerly as to only incompletely perform the division, and insalivation of the food. Physiology teaches us that the act of mastication, up to the time when the tongue is applied to the palate to push the morsel towards the isthmus faucium, is subject to the will; but that all the other consecutive movements of deglutition are involuntary, and belong to reflex actions excited by the impression produced by the food on the posterior part of the tongue. It appears to me that the anorexia in my two patients must be attributed either to a perversion of the gustatory sensation on transferring the food to the throat, which, instead of being pleasurable and appetising, was a source of trouble and disgust; or that the impression produced by the morsel of food on the dorsum of the tongue, was incapable of exciting the involuntary reflex action.

But to what part of the nervous system or to what nerves must the morbid phenomena be referred? It is indeed true that the glosso-pharyngeal nerves supply the base of the tongue and the velum palati; on the other hand, the vagi nerves have a great share in deglutition, both as sensory and as motor nerves. Physiology, however, in spite of much

labour and experiment made with the view of determining the action of the various nerves of the pharyngo-laryngeal apparatus in deglutition, has still left much in doubt; and I cannot lay aside the belief that anorexia of the kind which I have described has its origin and seat in one of the above-named nerves. But, on the other hand, knowing that the feeling of hunger is lost in animals whose cerebral hemispheres are removed; that in many diseases of the brain and in many forms of mental observation anorexia is a very prominent symptom; that it is seen to be produced by mental disturbance, by narcotics, etc.; we are led to consider whether the seat of anorexia may not be still more central, that is, in the brain. And we are the more warranted in adopting this supposition, knowing as we do that central cerebral diseases give rise to bulimia, and sialorrhœa, and vomiting, and saccharine diabetes. In the two cases related, the idea that the change which produced the anorexia lay in the brain cannot be excluded, notwithstanding the absence of other indications. Perhaps a careful necropsy would have thrown a ray of light on this difficult question. I certainly wished to have one, but my desire could not be gratified.

In concluding, Professor Brugnoli expresses the opinion that anorexia ought to have a place as a disease in nosology, at least until physiology and pathology shall have accounted for all the acts of healthy and diseased life with regard to the functions of the nervous system.

BULL ON THE INFLUENCE OF NEURALGIA OF THE TRIGEMINUS IN CAUSING IRITIS AND CHOROIDITIS, AND ITS PATHOLOGICAL SIGNIFICANCE.

DR. CHARLES S. BULL, ophthalmic surgeon to Charity Hospital, and assistant surgeon to the New York Eye Infirmary, writes as follows in the *New York Medical Record* for August 19. For more than a year past my attention has been attracted by certain phenomena of a nervous nature, in connection with iritis and choroiditis, which seem to me to illustrate the intimate connection which exists between neuralgia of the trigeminus and intraocular inflammation, when involving the iris and choroid; and the two forms of disease, neuritis of one or more branches of the fifth nerve, on the one hand, and intercurrent iritis or choroiditis, on the other, I think, bear the relation to each other of cause and effect. This view I have been induced to consider highly probable, from my own observation of seven cases.

The pathology of the trigeminus is still very obscure, and investigators are still groping in the dark, or in what, at best, is a very subdued light, for some slight ray that may help their footsteps along in the right direction towards a full comprehension of the subject.

Clinical facts are what we all need, either in advocating or in opposing a theory; and, therefore, to the broad field of clinical observation must we look for aid in elucidating the difficulties which overhang still a very important subject. Neuralgia of the trigeminus is an affection of great interest, not only on account of its frequent occurrence and obstinate resistance to treatment, but also on account of its connection with other lesions, which are sometimes of a most intricate nature. Many pages have been

written upon the single subject of herpes zoster ophthalmicus, in connection with neuralgia of different branches of the supraorbital and infraorbital nerves, and a great deal of valuable time and arduous labour has been spent in attempting to account satisfactorily for the occurrence of necrotic inflammation of the cornea and iris, which is met with in this disease.

Neuralgia of the fifth nerve is usually complicated with secondary affections of other nerves, which are intimately connected with those that are the original seat of the pain. When the pain in the nerve is the result of direct injury to the nerve-trunk, whether by external violence, by the mechanical pressure of a tumour, or by the nerve becoming involved in some inflammatory or ulcerative process, the general condition of the patient produces scarcely any effect. In general migraine it is a well known fact that the pain spreads to every terminal branch of the ophthalmic division; the eye on the affected side is deeply injected; there are lachrymation, photophobia, and partial ptosis, with occasional spasmodic contractions of the orbicular muscle, and cloudy vision.

In a tabulated report of 128 cases of neuralgia of the fifth nerve in the *Arch. Gén. de Médecine*, Notta says that the retina was completely or almost paralysed in ten cases; there was dilatation of the conjunctival vessels in thirty-four cases; permanent tonic spasm, not due to photophobia, in four cases; paralysis of the third nerve, causing ptosis, in six cases; and divergent strabismus in three cases. The pupil was dilated in three cases, and contracted in two cases, without impaired vision. In three others there was a dilated pupil with impaired vision. He also mentions among the complications, glaucoma and ulceration of the cornea.

Now the relations of the fifth nerve to so important an organ as the eye, tend to call our attention strongly to the phenomena that accompany its morbid conditions. Not merely the circulation of the parts supplied by this nerve becomes affected, but also the nutrition of the tissues. Anstie tells us that the periosteum of bone and the fibrous fasciæ in the neighbourhood of the painful points not unfrequently take on a condition of subacute inflammation, with marked thickening and tenderness on pressure. He considers also that glaucoma is in many cases of nervous origin, and in this opinion all ophthalmologists will coincide. In regard to this subject, Bowman first called attention to the interesting fact that, in certain glaucomatous conditions, there occurs a rapid change in the intraocular pressure; sometimes an increase, at others a decrease. The anomalies of tension are generally transient and of a varying nature. Of course we leave out of consideration all those conditions described as atrophy of the eyeball, in which the softness of the globe depends on disorganisation of the tissues and an altered intraocular circulation. We are still very ignorant of the physiological conditions which are here concerned. The hypotonia, or loss of tension, is constantly associated with contraction of the pupil. The patient complains of a dull pain in the eye, or of stabbing pains in the orbit, and in many cases there is violent neuralgia, which often merges into migraine. The spontaneous neuralgic pains generally occur periodically, often accompanied by injection of the conjunctiva and lachrymation. During this rapid change of tension, we should always carefully note the relation existing between

the hypotonia and the size of the pupil; when the pupil is narrowest the eye is softest, and the neuralgia generally the most severe. The hypotonia is very often accompanied by slight chemosis of the conjunctiva, and by small delicate vesicles or phlyctenulæ. Another symptom is the local change of temperature, generally an increase, though occasionally a diminution has been observed. There is also congestion of the corresponding half of the face, and hyperæmia and swelling of the nasal mucous membrane. These cases differ from one another in the prominence of the individual symptoms; in one there are merely changes in tension, in another there is increase of temperature, while in a third the functional symptoms are the most important. Jonathan Hutchinson has written much upon the subject in the published reports of the Moorfields Ophthalmic Hospital, and he has come to the following conclusions.

1st. The whole subject of reflex paralysis and reflex disturbance of nutrition is obscure and difficult of satisfactory proof. In some cases it is not at all certain that a central disease does not exist, to which both the lesion of sensation and the lesion of nutrition are alike due.

2nd. In many cases the changes are probably due to influences exerted through the vaso-motor nerves only, by which are induced alterations of the blood-supply to the affected part.

3rd. It is, however, probable that nutritive alterations may be induced through the nervous system, independently of any primary change in the calibre of the blood-vessels.

He cites, in detail, seventeen cases, one of which was glaucoma of one eye, occurring during a severe attack of neuralgia of the fifth nerve.

Comparatively recent investigations have proven that the phenomena of recurrent sensibility occur in almost all nerves. It is tolerably rare in neuralgia to find the whole of the nerve-trunk the seat of pain. The pain is commonly referred to certain limited spots, pressure upon which will at once induce it. As Valleix first pointed out, the most superficial nerves are principally affected, and their points of emergence on the surface the chief seats of pain. Arloing and Tripier proved experimentally that all nerves—motor, sensitive, and sensory-motor—possess recurrent fibres, which become more numerous as the nerve approaches the periphery, and decrease in number as we go back towards the centre, until they finally disappear altogether. As these recurrent fibres have never been seen to terminate in the thickness of the nerve-bundles, they may be assumed, from the characters noted, to end at different points in the tissues adjoining nerve-trunks or their branches. It is these fibres that, in certain cases of neuralgia, would be affected by morbid agents, which may possibly explain the occurrence of the isolated painful spots on nerve-trunks and their branches. Another argument in favour of this hypothesis, Arloing and Tripier find in the diminution, or even total disappearance, of these fibres above the points indicated by Valleix, as the special seats of neuralgic pain. It would be erroneous to assert that these fibres are alone affected in neuralgia; yet equally far from the truth to state that spontaneous neuralgia follows the course of the nerve. They also consider it supposable that the morbid agency acts at once, both on direct and recurrent fibres; consequently if we examine the mode of extension of the neuralgia, from the disordered nerve to one that is sound, an addi-

tional argument for their theory is afforded. It is certain that extension very often takes place through the medium of the nerve-centres, as is exemplified in the frequent coincidence of trifacial neuralgia with pain in the cervical nerves. In trifacial neuralgia it is not uncommon for the pain to glance from the ophthalmic branch to the mastoid process and upper part of the neck.

In cases of traumatic neuralgia, it is impossible accurately to determine always the amount of nerve-lesion in individual cases, and hence it is not always possible to study the relation between the extent of nerve-injury and the amount of consequent shock.

It might be supposed from the frequent occurrence of injuries to the eyeball and orbital margins, that wounds of the infraorbital and supraorbital nerves would be not uncommon accidents; but this is not so. They are sufficiently rare, though they do occur. Weir Mitchell has seen severe neuralgia of these nerves, where both had been contused by a single blow from the head of a cane.

Charcot mentions the case of a man, who, after receiving a violent blow upon the side of the head, which fractured the outer table of the parietal and adjoining portion of the frontal bone, complained of constant violent pain in the branches of the frontal and occipital nerves. Later, the neuralgia became localised in the right eye, orbit, and ear; the eye became red and prominent, the conjunctiva œdematous, and the upper lid paralysed. The cornea was hazy, and there was iritis with synechiæ.

Perhaps the most curious and interesting feature of these cases of iritis and choroiditis, is the strange variations in intraocular pressure, and their connection with the activity of the inflammation and the severity of the neuralgia. Close observation of the seven cases which I have been able to follow out, have led me to the conclusion that, as a rule, the beginning of the pain leads to a slight diminution of tension, which rapidly becomes more marked as the inflammatory action proceeds, and is lowest when the latter has reached its height. Without entering upon a discussion of the subject of intraocular pressure, let me say a few words in regard to the influence of the fifth nerve.

By irritating the medulla at the deep origin of the fifth nerve, the intraocular pressure is always increased, and lasts some time after cessation of the irritation. The result of irritation of the fifth is always the same, whether the cervical sympathetic was previously divided or not. The explanation is probably as follows. The first cause of increased tension is an active dilatation of the blood-vessels of the choroid and iris; the fact that the irritation of the fifth nerve increases the tension, even after evacuation of the aqueous humour, proves that a secretion or transudation of the ocular fluids occurs somewhere during this irritation. It is further proved by another experiment; if we divide the spinal cord between the occiput and the third cervical vertebræ, no considerable increase of intraocular tension is produced, but when the fifth nerve is irritated in the same animal, there is.

A final legitimate conclusion may be stated somewhat as follows. In some way, either peripherically or centrally, the trigeminus is irritated; as the immediate result, there occurs a slight increase of intraocular tension, caused by increased secretion of fluid in the posterior segment of the eyeball, by which the iris and lens are pushed forward; by the pulling of the zonula upon the latter, a new irritation

is set up, which again acts on the secretory nerves, and, of course, causes an increase of tension. As a secondary result of the pressure, the points of exit of the *venæ vorticosæ* are narrowed, and we get disturbance of the circulation. But the cause of the intercurrent inflammatory action is still undecided and obscure.

As a *résumé* of still later investigations of Hippel and Grünhagen, the following may be offered. The trigeminus, by dilatation of the vessels of the iris and choroid, and by diminution of the resistance to osmosis, can cause an increase of the intraocular pressure. The sympathetic, as the specific ocular nerve, when irritated at the superior cervical ganglion, causes diminution of the intraocular tension. In the history of glaucomatous cases, as well as of those of essential phthisis bulbi, there is an irritated state of the ciliary nerves. Now, since all sensory nerves stand in reflex connection with the vaso-motor nerves in general, and particularly with those of the eye, the irritated condition of the ciliary nerves may easily extend to the vaso-motor nerves of the eye, and may induce periodically or permanently contraction of the blood-vessels, a lessened supply of blood, and a consequent diminution of the tension of the eye. This I hold to be the explanation of the phenomenon of diminished tension, which occurred in all the cases of iritis and choroiditis that formed the basis for this paper. In all of them it was present, and in most of them very marked, and always showed an intimate connection with the state of the pupil and the degree of inflammatory action.

It is well known that, in the majority of cases, the affections of the eye, which occur simultaneously with or subsequent to neuralgia of the peripheral branches of the trigeminus, consist in periocular neuralgia, accommodative asthenopia, spasms of the orbicular and facial muscles, and the more serious lesions of the cornea and conjunctiva. We also know that these attacks of neuralgia are due to an inflammation of one or more of the terminal twigs of the ophthalmic division of the fifth. Now it is a matter of experience that the supraorbital or frontal branch is the most often inflamed, and the neuralgia is very often characterised by evening exacerbations. Galezowski cites a remarkable case of this kind of neuralgia in a patient from whom he had removed one eye three years before for hæmorrhagic glaucoma, and had done an iridectomy in the other for chronic glaucoma. In this eye, vision was restored and remained good for three years. The patient was then attacked by periodical neuralgia of the orbital margins, which was very violent; the eye became red, and vision was considerably impaired. Galezowski at first thought that it was a return of the glaucoma, but a closer examination showed that the disturbed vision was due to excessive lachrymation, and the case proved to be a true neuritis of the supraorbital nerve, which he cured by a succession of blisters.

If this frontal neuritis be not arrested, and if the neuralgic symptoms be prolonged during weeks and months, there result, very often, spasmodic contractions of the muscles of the face and lids. Here the case becomes more serious, and we must resort to subcutaneous division of the supraorbital and infra-orbital nerves, and even to an exsection of a portion of them.

Some authors are inclined to believe that, if the inflammatory action affect the peripheral twig, the

eye complications are very superficial, are most often purely neuralgic and rarely inflammatory; and that the most serious lesions of the iris and choroid are only met with when a deeper portion of the trigeminus is involved, viz. the ganglion of Gasser; and that when a cerebral lesion is at the bottom of the trouble, there is such an alteration in the nutritive centres of the eye that the most serious results are here met with. This reasoning I believe to be faulty, for cases of grave choroidal lesion certainly do occur where vision is practically abolished, where there is surely no cerebral lesion present, nor even any suspicion of one, but where the intraocular trouble is due solely to peripheral irritation.

In glancing over the current ophthalmic literature of the past few years, we are surprised to find how few cases there are published of grave lesion following neuralgic affections of the fifth nerve; and still more rare are those cases which are not glaucomatous, in which there is a *diminution* of tension associated with iritis or irido-choroiditis.

In the Transactions of the American Ophthalmological Society for 1870, Roosa mentions a case of conjunctival and corneal lesion with partial ptosis, in which, for nine months, there occurred every week with great regularity conjunctival injection of one eye with neuralgia, both ciliary and frontal, contraction and sluggishness of the pupil, lachrymation and diminution of tension. Only the ocular conjunctiva was injected, especially on the nasal side, but there were never any signs of herpes. The attack lasted several hours, and no treatment was of much use. After nine months the attacks became rarer, and finally ceased.

Noyes somewhere reports a case of unilateral herpes zoster ophthalmicus with bilateral blindness, which is of interest in view of the immediate cause of the loss of vision. There was the usual eruption on the left side of the face, accompanied by very violent and continuous neuralgia of the same side. The *left* eye became blind during the attack, but not from ulceration of the cornea. Ten months later the right eye became inflamed and vision was lost, just as the left one was, from irido-choroiditis, without any eruption on the right side of the face.

It may seem to some that seven cases are far too few to draw conclusions from, but we certainly can learn something from a careful observation of even this small number. In five of the cases, the patients had been neuralgic for a number of years, and in one of these since early childhood. Two cases were of traumatic origin—that is, the neuralgia was caused by direct injury to the nerve-branches, and in both of them the nerves were involved in the resulting cicatrices. In all seven the same symptoms were noted.

After the neuralgia had lasted for some time, usually months, a very violent attack occurred, accompanied by marked conjunctival injection and diminished tension, followed by a sharp iritis, during which the tension rapidly decreased, the pupil remained contracted in spite of atropine, though not always from adhesions, and the neuralgia ceased. During the height of the inflammation the tension remained diminished, but when the inflammation began to yield, the tension began to increase and the pupil to dilate. With each fresh relapse, the same symptoms followed in usually the same order, and the choroid generally soon became involved. In only one case was there ever any conjunctival herpes, and in this case the vesicles always ap-

peared at the inner angle, near the caruncle. The prognosis is almost always bad, for the neuralgic habit is almost permanent, and with each attack of neuralgia the eye is almost sure to sympathise after the first attack of iritis. Of course, when the choroid is involved, the aspect of the case becomes a grave one.

Dr. Bull here relates several cases, of which the summaries are as follows :

CASE I. Long-continued neuralgia of frontal nerve, followed by suppurative irido-choroiditis and sympathetic iritis in the other eye.

CASE II. Irido-choroiditis following violent and continued frontal neuralgia, of possibly traumatic origin.

CASE III. Irido-choroiditis, with diminished tension following contused and lacerated wound of the forehead in the region of the frontal nerve, with obstinate neuralgia.

CASE IV. Optic neuritis, followed by irido-choroiditis, preceded by intense neuralgia of the scalp and face of the right side, of traumatic origin.

CASE V. Irido-choroiditis following long-continued neuralgia of the first and second branches of the fifth nerve, with diminished tension, and ending in phthisis bulbi.

CASE VI. Irido-choroiditis with marked diminution of tension, preceded for several months by neuralgia of the frontal nerve, following fracture of the bones of the face.

CASE VII. Long-continued facial neuralgia followed by iritis with deposit on the membrane of Descemet, and subsequently choroiditis with exudation, with frequent relapses.

As regards the operation of iridectomy in these cases, a few words may not be amiss. Since the performance of this operation for making an artificial pupil, and more recently as a remedy for glaucoma, has made it widely known, it has become of such general practice in all sorts of cases, as to bring down upon itself from ophthalmologists during the past few years an amount of odium which is, I think, undeserved. The reaction has been too violent, and the pendulum of surgical opinion has swung so far in the opposite direction as to excite apprehensions that it will not swing back. There is no doubt that the operation has been performed in many cases, not only where it was not indicated, but also in many where it was strongly contra-indicated, as in cases of violent inflammatory action. Its ultimate disturbing influence upon vision has not been sufficiently considered by its too ardent advocates, and like many another medical or surgical remedy, it has been regarded as a sort of universal panacea for most of the deeper lesions of the eye. But recognising this fact, it will not by any means do to reject it, as too many have done, and consign it to the limbo of surgical oblivion.

In the subject under consideration, in iritis and choroiditis, we may still safely trust ourselves to the dictum of our great master, von Graefe, who writes as follows.

‘It is not iritis itself, the single acute attack, which in the majority of cases threatens the vision or even the loss of the eye, but the frequent relapses, which always cause new exudations into the pupil, and frequently its complete closure. In many of these cases the real origin of the evil lies in the eye itself, in the posterior synechiæ. The periodic ciliary neurosis, so common in these cases, often depends solely on the presence of these posterior synechiæ.

The closure of the pupil forms the point of origin of further complications, particularly chronic choroiditis and phthisis bulbi. Where atropine fails to break up the synechiæ, and relapses continue to occur, there is but one resource left us, the performance of an iridectomy, which should be so done as to break or tear away the broadest synechiæ, and thus do away with the exciting cause.’

From my own experience, while admitting that even an iridectomy does not always succeed in preventing the relapses in these cases complicated by a diseased trigeminus, yet I certainly would not postpone the operation till the eye had become seriously damaged by the relapses, but would do it as soon as it was evident that the ordinary means of treatment had failed.

BÓKAI ON POSTPHARYNGEAL ABSCESS IN CHILDREN.

A LARGE portion of the last number of the *Fahrbuch für Kinderheilkunde* (Band x. Heft 1 and 2) is occupied by this valuable paper. Dr. Bókai, who is directing physician to the Children's Hospital at Pesth, has already contributed to the literature of the subject, he having published, in the first volume of the *Fahrbuch*, twelve cases of the affection. His present communication is based upon the observation of 144 cases, in which, for statistical purposes, the first twelve are included. Of the whole number, 129 were idiopathic; three were due to the burrowing of cervical abscesses; four were secondary to vertebral disease; seven occurred in the course of scarlatina, and one was the result of an impacted foreign body—a brooch. Besides these, there were forty-three cases of lymphadenitis retropharyngealis, which terminated in resolution. The idiopathic cases were all believed to have originated in lymphadenitis. A large majority of the abscesses were situated laterally; only one-sixth occupied the middle line.

In the etiology, sex appeared to have no influence except that three out of the four patients, in whom it was secondary to vertebral disease, were boys. By far the larger number (134) occurred under four years of age; thus eighty-six in the first year, thirty-four in the second year, and fourteen in the third year. The youngest patient was eight weeks old. Thirty-two were distinctly scrofulous; ten rachitic. The preponderance of the affection in early childhood is ascribed to the much greater frequency of local affections of the mouth and throat at this period, more especially perhaps in connection with dentition. Scarlatina was not a very potent factor in its production, since only seven out of a total of 664 scarlatina patients were affected by it.

The first symptom of postpharyngeal abscess is difficulty of swallowing (in infants, inability to suck) which may lead to regurgitation, and may be associated with vomiting, of the food. Next, the voice becomes muffled or nasal, or when the abscess is fully developed, of a gurgling character; during sleep the patient snores loudly. The interference with respiration is greatest when the swelling is near the glottis, and, in these cases especially, the child is very restless, and frequently wakes in a choking fit. The position and the extent of the abscess have the most influence upon the respiration; but the small size of the throat in young children, and the possibility of oedema glottidis, must also be taken into consideration. The increased secretion is a further

hindrance. Cough is not constant; and, when present, is usually a late symptom. The neck is stiff and, in the advanced stage, a prominence may be seen near the angle of the jaw; in the earlier stages, this must be felt for. On examining the throat, the isthmus faucium appears narrowed and is covered by an accumulation of viscid mucus. The pharynx and adjacent parts are very red, and a swelling of the same colour, and of the size of a bean or larger, is seen on the posterior wall, usually behind one of the tonsils; the soft palate and uvula are thrust forward. The negative results of inspection are not sufficient to exclude abscess. Digital exploration is the only means of determining with absolute certainty its existence; and this method gives one in addition an idea of its development and of the distance it extends downwards. It must, therefore, never be omitted. Fluctuation may be felt if the lump in the neck be pressed while the finger is on the abscess. Fever, in the beginning, is but slight in acute cases, and is often absent in the chronic and subacute; when the abscess is fully formed it is present, but the temperature is rarely over 103° F., and the pulse is not markedly quickened unless cyanosis sets in.

Of the 144 patients, 120 were cured, 11 died, and 13 were lost sight of. An analysis of the fatal cases gives the following results—five out of the 129 idiopathic cases, three out of the four with vertebral disease, two of the seven scarlatina patients, and the one traumatic case. The three, in whom it was secondary to cervical abscesses, all recovered. In general, it may be affirmed that the termination will be probably fatal unless surgical aid be given. Spontaneous bursting of the abscess must not be waited for, though it occurred in 19 cases. Of the 11 above cited as fatal, seven were opened with the bistoury, two opened spontaneously; and, in two, the abscesses remained unopened. The prognosis is unfavourable when the child is very young or weak, when the course of the disease is very acute, and when the abscess extends very low down. Of the complications, the most important is pneumonia. This occurred in 10 cases; in three before the opening of the abscess, in seven after this; it was engendered apparently in the latter, by the admission of pus into the air-passages. Facial paralysis occurred in three cases, perforation of the external meatus in one.

The treatment of lymphadenitis consists in the application of cold compresses, which, if the case be acute, must be very frequently changed. At the same time, cold is to be applied internally; small pieces of ice may be swallowed, or, in those too young to understand this, iced water may be syringed against the pharynx. As soon as pus forms, poultices or warm compresses must be substituted, and when the abscess is fully developed, it must be opened. In five advanced cases, the pressure of the finger was sufficient for this, and they all ended in recovery; though, in one, the abscess refilled and had to be opened with the knife. The instrument usually employed was an ordinary sharp-pointed light bistoury, guarded or not with strapping; when the abscess was very low down, a curved trocar was used. In some cases, the operation saved the patient from imminent death. The after-treatment consists in syringing out the throat with lukewarm water, and in maintaining the incision patent for some days; the occasional pressure of the finger is generally enough for this. Severe bleeding may follow the operation, especially when this is attempted too early; but, unless an artery be wounded (and the proximity

of the internal carotid must not be forgotten), cold injections should suffice to arrest this. Another danger is the entry of pus into the air-passages; this produced asphyxia in two cases, and would have been fatal but for timely faradisation of the phrenic nerve. The influence of this accident upon the development of pneumonia, has already been referred to. Abscesses in connection with vertebral caries should not be opened unless they offer a serious impediment to respiration or deglutition. In no case was it deemed advisable to open a postpharyngeal abscess from the outside, though it is allowed that such a course may be sometimes necessary. The article closes with the notes of ten cases.

[One cannot but feel some surprise at the large number of cases; but it must be remembered that they were spread over twenty-two years. The total number of patients treated at the hospital during the same period was 109,189. The great length of the paper renders it impossible to do complete justice to it in these columns, so that those specially interested in the subject must be referred to the original.—*Rep.*] RALPH W. LEFTWICH, M.D.

RAYMOND, SOULEZ, AND CHOFFÉ ON HYDROBROMATE OF QUININE.

IN the *Journal de Thérapeutique* for August 25 and September 10 are three articles by Drs. Raymond, Soulez, and Choffé, bearing upon the therapeutic value of the hydrobromate of quinine. The first paper, that by M. Raymond, narrates the experience of the remedy in M. Gubler's service at the Hôpital Beaujon, where several cases of intermittent fever have been successfully treated with it. It is specially to its use in cases of this nature that the present paper is confined, and Dr. Raymond reserves for future consideration its influence in gastric derangements of a remittent form, in acute articular rheumatism, and some other affections.

Five cases of intermittent fever, four being tertian and one quotidian, are narrated, in all of which the remedy seems to have had a very rapid effect in stopping the attacks. In one case the fever had resisted the action of the sulphate of quinine, which though administered only in small doses, caused buzzings in the ears, vertigo, and other symptoms of cinchonism, but quickly disappeared after two injections of 20 centigrammes (3 grains) each of the hydrobromate.

These observations show unmistakably the powerful action of the hydrobromate administered by subcutaneous injection. The cases were all of an exceedingly well marked character; the method of treatment employed consisted in the injection of 10 centigrammes ($1\frac{1}{2}$ grains) of hydrobromate of quinine in solution, twice in the morning and twice in the evening. This treatment produced the following results: in all the cases the intermittent fever was cured; in three very small quantities of the remedy (40 to 80 centigrammes: 6 to 12 grains) sufficed to cut short the attacks and prevent their return; in one case two grammes (30 grains) were required. Two of the patients who left the hospital ten days after the cure had a reaccession of the fever, but on being readmitted to the hospital and again placed under the treatment they were again rapidly cured, and this time definitively.

These facts force upon us the conclusion that intermittent fevers, even when very severe, are easily

cured by subcutaneous injections of hydrobromate of quinine, and very often by very small doses of it. Its rapidity of action is remarkable, and to this rapidity is added certainty. With regard to the local effects of the injection, Dr. Raymond says that in over 300 injections no accident has occurred; very slight local swelling has sometimes been observed, but this has always rapidly disappeared without inflammation.

The hydrobromate has also been employed in febrile gastric derangement, when there was marked access of fever towards evening; in some catarrhal fevers, in acute articular rheumatism, etc., and in all of them good results have been obtained, and the fever has rapidly yielded. It would therefore appear that the sphere of action of the drug is by no means limited to paludal affections, but that it may advantageously take the place of the sulphate of quinine in all cases in which that remedy is indicated.

Dr. Soulez's paper is devoted to a consideration of the precautions necessary to avoid local accidents in hypodermic injection, and of the harmlessness of injections of hydrobromate of quinine.

He has practised injection 116 times, on 32 patients, the subjects of acute attacks of intermittent fever, or of attacks appertaining to that form of special anæmia described under the name of paludal cachexia. In 90 of the cases 10 centigrammes were injected, in 25 of them 20 centigrammes, and in one 30 centigrammes. In the 10 and 20 centigramme doses some very slight pain was caused at the moment when the liquid raised the skin, and in one of the 20 centigramme cases slight inflammation of the dermis was produced. The injection of 30 centigrammes caused an erysipelatous inflammation about a square decimètre ($3\frac{1}{4}$ square inches) in size.

Dr. Soulez proceeds to say that in cases where great alteration in the organism exists, as the result of severe fever, typhoid for example, or where there is prolonged suppuration or pulmonary phthisis in an advanced stage, the practice of injections must be forbidden.

The precautions necessary to be observed in the injection of the hydrobromate are as follows. The passage of the needle through the skin should be as direct as possible; the point of the needle should be carried into the cellular tissue at a certain distance from the point of entry. The injection should be made very slowly, and the finger should rub gently so as to diffuse the liquid; the needle must be withdrawn very gently and slowly; before it leaves the tissues it should be gently raised, and the skin should be pressed by the finger on the cannula, and the finger should remain applied for some seconds. To sum up, it appears that the injection of hydrobromate of quinine in doses of 10 centigrammes is absolutely innocuous to the cellular tissue; and the same will probably be the case with doses of 20 centigrammes, though it will be prudent at present not to go beyond this.

In the paper of Dr. Choffé, the author narrates his experiences with the drug in Algeria, Cochin China, and India. He has employed the drug in four different classes of cases: 1. In paludal fevers; 2. In neuralgia of a similar origin; 3. In internal congestions; 4. As a sedative. He has only employed the salt in the form of pill or solution, and has not administered it hypodermically. In miasmatic fever Dr. Choffé has used the hydrobromate in about thirty cases and has found it superior to

the sulphate in the fact that the dose is smaller, cinchonism absent or very slight, and that vomiting when present has always quickly ceased. In intermittent neuralgia, also, he has found it act much more rapidly than the sulphate, and in some cases it has been effectual where the sulphate had failed. It is, however, above all as a sedative in febrile affections that Dr. Choffé considers the hydrobromate valuable. In hectic fever accompanying phthisis and in articular rheumatism, acute and chronic, he has by its aid procured good nights with sleep. He also employed it in an epidemic of scarlatina with admirable calmative effect.

Dr. Choffé concludes by expressing his opinion that in hydrobromate of quinine the physician has a most valuable remedy, gifted with febrifuge qualities equal to any previously known, and uniting with them a calmative power superior to the sum of the substances composing it.

W. DOUGLAS HEMMING.

ANATOMY AND PHYSIOLOGY.

TSCHIRIEW ON THE DEPENDENCE OF THE RHYTHM OF THE HEART ON VARIATIONS IN THE BLOOD-PRESSURE.—As to immediate effects of the blood-pressure on the rhythm of the heart, the results of previous investigators coincide tolerably well. They all found that, when the blood-pressure was increased, after separation of the heart from the central nervous system, there was either acceleration or slowing of the heart-beats; and less frequently the heart-beats were unchanged. As to the interpretation of these phenomena, however, there is much variance. Nay, Knoll and Navrocki have even denied the 'facts' of previous experimenters.

S. Tschiriew, of St. Petersburg (*Centralblatt für die Medicin. Wissenschaften*, no. 35), has again investigated this subject, and confirms the results of former experimenters (Ludwig, Thiry, Bezold, E. and M. Cyon). He has discovered a new fact, namely, a very considerable and sudden slowness of the heart-beats during the increase of the blood-pressure, as well after section of the cervical nerves alone as after complete separation of the heart from the central nervous system; a subsequent, sometimes very considerable, acceleration of the pulse after the cessation of the increase of blood-pressure, on cessation of the pressure exerted on the abdominal aorta.

The conclusions at which the author arrives are the following. 1. Considerable and rapid variations in the blood-pressure can change the rhythm of the isolated heart. 2. Every considerable and rapid increase of blood-pressure can directly excite both inhibitory and the motor cardiac ganglia, by increasing or diminishing the number of beats, the number seldom remaining the same. 3. The final character of the changes in the hearts' rhythm during the increase of the blood-pressure depends upon the counterbalancing actions of both of the above named factors. For a weak stimulation of the vagus can completely extinguish the phenomenon of a maximal stimulation of the nervous accelerans (Bowditch), so it is easily understood, why 4. in those cases where the inhibitory mechanism of the heart is sufficiently developed and excitable, the increase of the blood-pressure for the most part slows the heart's rhythm, whereby the accumulated excitation of the motor ganglia appears after the cessation of

the increase of pressure, *i.e.* as subsequent acceleration. If, on the contrary, the inhibitory apparatus be feebly developed and exhausted by previous stimulation, then a very considerable increase of the pulse-beats may occur during the increased blood-pressure. 5. The more pronounced the acceleration of the heart-beats during the increase of pressure, the feebler is the subsequent accelerating effect, and *vice versa*. 6. The heart receives from the accelerating nervous system a constant tonic excitation. The central ends of this system can be excited by increase of the blood-pressure but not by its diminution. In the normal condition, in addition to this direct influence, there is an indirect one; through the vagi and accelerantes. 7. Small doses of atropin paralyse the peripheral ends of the vagi (a fact already well known), but not the inhibitory apparatus itself. 9. The pulsus bigeminus is simply a slow pulse, in which the ventricle is peristaltically contracted. 9. Anacrotism of the pulse, as is the case in aortic insufficiency, or in the arterial stenosis, is the expression of peristaltic heart contractions, and not of variations in the elasticity of the wall of the vessel.

RANVIER ON T-SHAPED NERVE-TUBES AND THEIR RELATIONS TO GANGLIONIC CELLS.—L. Ranvier (*Comptes Rendus*, December 30, 1875, and *Centralblatt für die Medicinischen Wissenschaften*, no. 30), investigated the spinal ganglia and the ganglion Gasserii of rabbits by the interstitial injection of perosmic acid, and agrees with former authors that the cells are unipolar. Whilst former authors imagined that the fibres springing from the cells, passed either towards the centre or the periphery, Ranvier is convinced that these fibres, after a longer or shorter twisted course, are inserted in a T-shaped manner into one of the nerve-fibres of the posterior root, and becomes united to it. This insertion always takes place at a Ranvier's node.

The author does not affirm that the processes of unipolar cells all end in this way. Still, he remarks that, on teasing the posterior root just at the spinal ganglion, an extremely large number of T-shaped nerve-fibres are to be found. The author also remarks on the possibility that the processes of the unipolar ganglionic cells may not be inserted singly on to single nerve-fibres, but that several of them may perhaps unite in a common trunk, which becomes inserted in a T-form on a fibre.

WM. STIRLING, D.Sc., M.D.

RUTHERFORD ON THE ACTION OF THE INTERCOSTAL MUSCLES.—Professor Rutherford, being convinced that Hamberger's model of the action of the intercostal muscles by means of parallel bars and elastic bands is erroneous in principle, adopts the less fallacious method of applying the elastic bands by means of nails to the ribs themselves of a skeleton; for, as Professor Humphry has demonstrated, the ribs, unlike the rigid bars of the above-mentioned model, are arcs capable of rotation round an axis directed from their posterior ends to the costal cartilages. The results of Professor Rutherford's experiments are recorded in a short note, illustrated by figures taken from photographs, in vol. x., part iii. (April, 1876), of the *Journal of Anatomy and Physiology*.

In the model the representation of the ribs descend by the action of the elastic bands; but in the skeleton the ribs are raised—the second, third, and fourth individually, their costal cartilages being separate,

while, if the fourth and fifth ribs be further connected by a band, a simultaneous elevation of the latter and of the four succeeding ribs will result, owing to the fusion of their cartilages. Since the first rib is more fixed, being unlike the rest, less flexible, devoid of joint between it and its cartilage, and forming an arc of a smaller circle, the ribs which succeed it are raised; but if the last rib of the series be made the fixed point, by being held immobile, all those above it [the first rib excepted? *Rep.*] will be, on the contrary, depressed. Both the external, as well as the internal intercostals, seem to elevate the ribs to which they are attached, though it would appear that, by the action of the former, the *manubrium sterni* is more elevated, and the ensiform process drawn further forward than they would be by the latter series of muscles. How far this experiment may indicate the powers of the actual muscles it is impossible to say, as the effect of the elastic bands depends, not only on their position, but also on the degree of their power of stretching.

JOHN C. GALTON.

EWART AND THIN ON THE STRUCTURE OF THE RETINA.—J. C. Ewart and G. Thin give an abstract of their researches on this subject (*Journal of Anatomy and Physiology*, vol. xi. part i. pp. 96-108). They find, in the first place, that the true radial fibres of the frog's retina extend beyond the external limiting membrane to the outer segments of the rods. Taking the layers *seriatim* from within outwards, the chief points observed by them are as follows.

Membrana limitans interna.—This is described as distinct from the hyaloid, and covered with epithelial cells. In the sheep a double layer of cells was observed, which can be distinguished from the ends of the radial fibres immediately external to them.

Optic Nerve-Fibres.—In what were probably delicate fibrillary bundles of connective tissue in this layer, the authors observed many narrow elongated cells, but are unable to say whether they completely invest the bundles or not.

Ganglionic Cell-Layer.—The authors have nothing new to add with regard to this layer.

Molecular Layer.—On both surfaces of this the authors found a layer of small round nucleated cells, investing it like an epithelium. The ground substance of the layer they found to consist of parallel cylindrical elements of uniform size, with a diameter equal to that of a human blood-corpuscle. Lying on these cylinders were cellular elements, either cells or cell-nuclei. In vertical sections of the frog's retina they found a division into seven or eight layers separated by clear spaces.

Internal Granule Layer.—This the authors describe as composed of small rounded cells, arranged like an epithelium; of radial fibres with their nuclei; of small spindle-cells and of narrow flat cells, sometimes adhering to the membranous substance connecting the radial fibres. They are unable to distinguish the bipolar ganglionic cells of Schultze and Schwalbe.

Intergranule Layer.—This the authors believe to consist, in the frog, of two cellular membranes bounding the granule layers. They have also found in this layer numerous delicate true fibres continuous, many of them with the radial fibres.

External Granule Layer.—The authors describe as outer and inner pedicles of the rods conical bodies united by their apices, the former being separated

from a rod by a narrow line. Between these are elliptical bodies, which they term pedicles of the cones. Rounded nuclei are seen in the frog's retina, belonging to cells which lie in two rows between the external limiting membrane and the intergranule layer. Elliptical nuclei also occur appertaining to cells arranged in a similar manner. All fibres of this layer they describe as belonging to the system of radial fibres. They have observed them uniting after passing through the layer or bifurcating after piercing the external limiting membrane. There is, however, no actual continuity between them and the rods and cones.

External Limiting Membrane.—Besides fibres resembling radial fibres and true membranous substance, the authors find a continuous layer of cells, which in teased preparations may be seen attached to the inner segments of the rods and cones. There is no continuity between the inner segments of the rods and cones and their corresponding pedicles (Körner), the above cells separating the two completely.

Bacillary Layer.—In the frog's retina the authors describe between the two segments of a rod, and completely separating the one from the other, a round nucleated cell which can be distinguished from the lens-shaped body (*linsenförmige Körper*) of Max Schultze. The authors have observed long narrow cells lying on the inner segments of the rods, and nuclei on their outer segments. The latter, they think, are probably ensheathed by a membrane. They have not seen any axial thread in the outer segments of the rods.

Pigment-Epithelium.—In opposition to previous observers, they conclude that the pigment of the retina is always external to the substance of the cell, and is therefore contained between, and not within, formed elements. In conclusion, the authors have found no proof of the nervous nature of the rods and cones, and were unable to trace the nerve-fibres from the ganglionic cells further than the molecular layer.

It is to be regretted that from want of space the authors are unable to give an account of the methods employed in this research.

VINES ON THE DIGESTIVE FERMENT OF NEPENTHES.—Mr. Sydney H. Vines (*Journal of Anat. and Phys.*, vol. xi. part i. pp. 124-27) gives the results of his experiments on the digestive process in 'carnivorous' plants. He finds that they are capable of digesting proteid matters by a process essentially similar to that by which the gastric digestion of animals is performed, and that, in the second place, the mode of origin of the digestive ferment, in *Nepenthes* at least, is essentially similar to that indicated by Heidenhain with reference to the digestive ferment of the pancreas (pancreatin), and by Ebstein and Grützner as regards that of the stomach (pepsin). He has also experimented with the pitchers of *Sarcenia* (*flava*), but has as yet failed to ascertain the presence of a digestive ferment in them.

LANGLEY ON THE ACTION OF PILOCARPIN ON THE SUBMAXILLARY GLAND OF THE DOG.—Mr. J. N. Langley describes (*Journal of Anat. and Phys.*, vol. xi. part i. pp. 173-80) the results of his experiments on this subject, in which a solution of nitrate of pilocarpin (the alkaloid of *jaborandi*) was injected into the saphena vein or the facial artery. He sums up the action of this substance as follows.

In small doses (up to about 30 milligrammes) it exerts an action on the gland very similar to that produced by stimulation of the chorda tympani. It causes a rapid secretion and a considerable increase of blood-flow, both of which gradually decline. Its effects are little if at all altered by section of chorda tympani, or of the sympathetic. Stimulation of the chorda tympani increases the effects of the pilocarpin; stimulation of the sympathetic on the other hand diminishes the effects, so that both nerves are functionally unaltered. The secretion is stopped by injecting atropia, but a quantity sufficient to paralyse the chorda tympani does not prevent a relatively large quantity of pilocarpin from producing its ordinary results. The secretion or absence of secretion is dependent on the relative quantity of the two poisons present, as is the standstill or beat of the heart.

In larger doses, it causes no flow of saliva at all, and prevents the chorda tympani from producing any secretion. It considerably diminishes the blood-flow through the gland, as well as the effect of the chorda tympani on the blood-flow. It does not, however, stop the sympathetic secretion.

DRESCHFELD ON A NEW STAINING FLUID.—Dr. J. Dreschfeld (*Journal of Anat. and Phys.* vol. xi. part i. p. 181) draws attention to a dilute solution of eosin (1 part to 1,000-1,200 parts of water) as a microscopic staining fluid. The sections to be stained, having been immersed in this fluid for one minute to a minute and a half, are put for a very short time into water slightly acidulated with acetic acid, and can then be mounted in glycerine or in Canada balsam. The advantages claimed for this fluid by the author are these. 1. The time required for perfect staining does not exceed one to one-and-a-half minute. 2. The solution can be kept without altering, and remains perfectly clear for any length of time. 3. Eosin has the property (probably owing to its fluorescence) of clearing tissues. 4. It differentiates the component parts of a tissue, which renders it particularly applicable to complicated structures, as tumours.

The author finds it particularly useful in the examination of nervous tissue. The nuclei, nucleoli, and processes of the ganglion-cells, and the axis-cylinder of nerve-fibres, are stained light pink; the areolar tissue takes a much deeper colour; the medulla of the nerve-fibres, on the other hand, is not stained at all.

CREIGHTON ON THE DEVELOPMENT OF THE MAMMA AND OF THE MAMMARY FUNCTION.—Dr. C. Creighton (*Journal of Anatomy and Physiology*, vol. xi. part i. pp. 1-32) combats the generally accepted opinion that the mamma is a complex extension inwards of the ectoderm, and confirms, to a great extent, the views expressed by Goodsir, with regard to the development of glands in general, and their growth during a period of functional activity. The agreement, however, of his conclusions with those of Goodsir was not known to the author, till his own were in great part formed. The author describes the development of the mammary acini in the guinea-pig, and that of the inguinal fat body of the kitten, and traces the striking resemblance existing between the two processes: he then describes the development of the ducts in the guinea-pig. His conclusions are these. 1. The mammary acini of the guinea-pig develop at many separate points ('ger-

minial spots' of Goodsir) in a matrix tissue; the embryonic cells from which they develop are of the same kind that give origin to the surrounding fat tissue; and the process of development of the mammary acini is, step for step, the same as that of the fat lobules. 2. The ducts of the mamma develop from the same matrix tissue by direct aggregation of the embryonic cells along predetermined lines; the ducts develop in the individual guinea-pig before the acini, whereas in the phylo-genetic succession the ducts are a later acquisition; and this reversal of the order of acquisition of parts is in accordance with the principle stated by Mr. Herbert Spencer that, under certain circumstances, the direct mode of development tends to be substituted for the indirect.

The homologue of the mamma is therefore, according to the author, not a recess of the ectoderm, but a fat-body. In a previous paper the author has described the cellular changes occurring during each 'evolution' of the gland in pregnancy, and he concludes that these are simply a repetition of those cellular changes which the cells of the part went through in their development. The function of the mamma may therefore be said to be a sustained repetition of its development.

E. CRESSWELL BABER, M.B.

PATHOLOGY.

MATTERSTOCK ON THE BLOOD IN ACUTE YELLOW ATROPHY OF THE LIVER.—Matterstock (*Wiener Med. Wochenschrift*, 1876, pp. 882 and 910) has made observations upon the blood of two cases of acute yellow atrophy of the liver which were under the care of Professor Gerhardt in the Julius Hospital at Würzburg.

The blood was obtained in the usual way by pricking the finger; a drop was immediately put upon a glass slide, and forthwith examined with the microscope. In the first case, a great increase in number of the white corpuscles was seen, approaching 1 to 12. In the second, the white corpuscles were also somewhat increased, but the chief changes were seen in the red corpuscles. Not one could be found with the natural aspect. Two shapes prevailed: one, the mulberry; the other the stellate. [It will be thus seen that one shape is only an exaggerated state of the other, the processes from the corpuscles being in one case rounded, in the other pointed.—*Rep.*] Four to eighteen of these processes were seen at the border of a corpuscle; no movement or cleavage of the corpuscles could be made out.

The corpuscles themselves were dotted with points, according to the number of the processes. The corpuscles which showed no processes looked swollen and pale, as if acted on by water.

By the side of these changes appeared those which always take place when blood is drawn from the vessels, and which are commonly set down to dilution with water or cooling of the blood (Rollett). These corpuscles appeared smaller than the rest, contracted and with processes much less marked than in comparison with the others. These either fell together in groups or showed singly in the field in the midst of the large corpuscles.

In the first case the same appearances were seen, but the corpuscles were not altered in such large

numbers. Some had curved themselves into the shape of a saddle. The cupping of the disc could well be made out.

Matterstock thinks these changes not due simply to the removal of the blood from the vessels; but at the same time does not insist that these altered shapes circulate in the blood. He next inquires by what agents these changes are caused. It is not due to the high temperature of the blood, as that never rose above 38.5°C. or 101.3°F. Neither is it due to the bile-acids; as they have quite a different action on the corpuscles, suddenly and completely destroying them. In uraemia the blood-corpuscles are quite natural in shape. In conclusion, Matterstock remarks that there are many points in common between the appearances seen in these corpuscles and in the monad-containing corpuscles described by Hüter. They differ, however, as the corpuscles from the jaundiced patients showed no to and fro movement.

J. WICKHAM LEGG, M.D.

MAZZOTTI ON A CASE OF NUMEROUS CYSTICERCII OF THE BRAIN AND CEREBRAL MENINGES. Dr. Luigi Mazzotti describes in the *Rivista Clinica*, 1876, the case of a woman, aged thirty-two, who, having previously had no illness of importance, had, after a natural labour in June 1874, abundant metrorrhagia, which was treated by repeated cold applications to the abdomen. Early in August she began to show symptoms of mental disturbance, consisting chiefly in hallucinations of sight. Afterwards, she had convulsive attacks, but preceded by premonitory symptoms; these were of short duration, and left the patient extremely exhausted and weak. Her moral character was changed; she became somewhat irritable, and her intellect and memory were observed to be weakened. These symptoms having continued several months, in May 1875 she was seized with violent pains in the head, affecting first the vertex, then the nape of the neck. As there was no improvement, she was admitted into the hospital at Bologna on July 23, 1875.

On admission, she appeared to be well fairly nourished and florid; there was nothing abnormal in the form or size of the head, nor any appreciable lesion of any other part of the body; her senses were perfect; the pulse and temperature normal. She answered questions correctly, though rather slowly; and herself acknowledged that her ideas were rather confused and her memory weak. Her speech was slow and in cadence, but accurate and free from stuttering. She preserved her appetite well, and her digestion was good. She had pain all over the head, but it was most severe at the nape of the neck. The paroxysm of pain came on at all times of the day and night without apparent cause, and were only temporarily relieved by hypodermic injections of acetate of morphia and by the internal use of choral.

On the second day from her admission into hospital, she had a convulsive attack attended with foaming at the mouth and loss of consciousness. She had no more attacks of the kind; and on August 2 she died suddenly. On *post mortem* examination, the dura mater, on both the vault and base of the skull, was found studded with numerous cysticerci; the arachnoid and pia mater were much congested, and adherent. The brain was literally occupied with cysticerci; they were found in both peripheral and the central parts, in the upper part and in the base, in the white substance, grey substance, and great ganglia. None were found in the

cerebellum, medulla oblongata, eye, or muscles, nor in any other part of the body. The thoracic and abdominal viscera were healthy, except that the lungs presented old deep cicatrices at their apices.

A. HENRY, M.D.

ROKITANSKY ON MALFORMATIONS OF THE CARDIAC SEPTA.—In the July number of the *Journal of Anatomy and Physiology*, appears a translation of an analysis by Professor Stricker, of Vienna, of an exhaustive monograph by the veteran pathologist, Professor Rokitansky, entitled 'Die Defecte der Scheidewände des Herzens.' Anyone who has been fortunate enough to study in the Pathological Institute attached to the General Hospital in Vienna, will readily understand from what wealth of material, not to speak of the accumulated observation of a long and busy lifetime, the learned professor has been enabled to draw. A but little known dissertation by Lindes (Dorpat, 1856) is, it seems, the only work in which similar statements as to the development of the heart, differing from such as are in general acceptance, are to be found.

The septum auricularum does not, as hitherto received, develop upwards, sickle-wise, so that a foramen ovale is left, but, beginning at the roof of the as yet simple auricle, extends thence forwards along the anterior and posterior walls. A stage, however, is reached in the course of this development, in which the septum may be represented as a curtain stretched between the upper end of the vertical ridges. In the lower half of this partition there is, at first, at all events, a foramen by which the two auricular cavities communicate; but by the forward growth of the septum this aperture is gradually closed up, so that each cavity comes to be shut off from its fellow. Before however, the septum has become fused by its lower border with the roof of the ventricles, certain small apertures may be seen in it, in the chick, *e.g.* about the fourth day of incubation, which increase in number until about the sixth day of incubation; this curtain comes to resemble a beautiful lattice. Through this the blood-stream is filtered from right to left, causing it to bulge, pouch-like, to the latter side. The meshes are gradually closed up, until at last but one fissure-like aperture, the foramen ovale, is left at the upper anterior border of the septum. In a human foetus, of three months, the septum auricularum took the form of a membrane perforated sieve-wise, and supported upon a muscular frame, while at five months it had the appearance of knitted work, *i.e.* seemed to be extremely thin at numerous points, as though here perforated. This appearance, together with a bulge towards the left, was witnessed in foetuses of seven and eight months, and even in the newly born. Peacock ascribed a persistence of the embryonal lattice in the heart of the new-born child to a premature closure of the foramen ovale.

It is worth recording that in the foetus of a horse this structure was seen to resemble a pouch, with perforations near its front border, supported upon a muscular frame, and bulging into the left auricle, thus closely resembling its homologue in man and in the bird. It is owing, moreover, to the septum auricularum that there is to be seen, even from the very beginning, a prominence lying above and behind in the vena cava, in such wise that a small portion of this vessel to the left is parted off as a *cul de sac*, open toward the left auricle, and originating the pulmonary veins.

The ventricular septum begins as a crescentic muscular ridge, with its convexity pointing upwards, inserted into the anterior, inferior, and posterior walls of the single ventricle, a foramen being thus left at its upper border, so that there is a stage in development in which the two cardiac septa together form a partition perforated by a figure-of-8 foramen. Of this the upper half is eventually filled up, as already stated, while the lower remains always patent, as the ostium aorticum.

As regards the bulbus arteriosus, this originally opens entirely into the right ventricle, then becomes divided by a special septum into an anterior pulmonary artery and a posterior aorta; at which stage both large arterial trunks belong to the right ventricle, while the left ventricle would be quite devoid of exit did not the foramen septi ventriculorum remain permanently patent. At a certain stage in development the left ventricle pours its blood into the right, whence mixed blood passes into both pulmonary artery and aorta. Afterwards the circumference of the foramen just mentioned grows gradually on the side facing the right ventricle, so that the aorta may be said actually to grow through the right ventricle. It will be readily understood, after the statement that the ventricular septum is divided into a posterior membranous and anterior muscular portion, this latter being further separable into a posterior and anterior part, that a deficiency of the posterior part of the muscular portion leads to an intercommunication between the two ventricles, while incompleteness of the anterior part causes a communication between the two large arterial trunks.

Malformations of the auricular septum may be divided into two distinct groups; the first including those determined by the development of the primary or provisional system, this being either entirely or partially wanting, *e.g.* below, having failed to reach to the septum ventriculorum, while the second group includes all defects arising during the transformation of the primary into the secondary septum, *e.g.* the vessels in the latter do not come to be filled up. After what has been already stated, it will readily be understood how a stenosis of the aorta must cause the blood of the left ventricle to accumulate to an excessive amount in the right ventricle, since both this vessel and the pulmonary artery originally open into the latter cavity. This repletion of the right ventricle must cause the corresponding auricle to become overfilled, and consequently bring about an enlargement of the interauricular foramen. If, however, development have proceeded as far as closure of the interventricular septum and consequent limitation of the aorta on the side of the right ventricle, the excessive distention with blood will be confined to the cavities of the left heart, those on the right side being only secondarily affected through the pulmonary circulation. When a deficiency, either partial or complete, of the septum ventriculorum is accompanied by a similar condition of the interauricular septum, an instance is here seen of a bilocular heart—a fish-like character; while, if the latter septum alone be fully developed, an example of a trilocular organ—reptilian in character—is afforded. Anomalies in position of the large arterial trunks are invariable sequelæ of a complete absence of the interventricular septum.

With regard to stenosis and atresia of the pulmonary artery, Professor Rokitansky divides them into three groups, and combats the view hitherto

taken that they are due to inflammation occurring in the foetal heart ; proving instead that they are rather malformations due to various degrees of arrest of development, which may later be modified by some inflammatory process. As for atresia of the pulmonary artery, this occurs whenever the deviation of the septum of the bulbus arteriosus, already described, from the normal arrangement is so considerable that this partition, the convexity of which is directed towards the pulmonary artery, becomes actually applied to the wall of that vessel, and fuses with it as far down as its mouth.

JOHN C. GALTON.

BROWN-SÉQUARD ON ALTERATIONS IN THE MUCOUS MEMBRANE OF THE STOMACH CONSEQUENT ON LESIONS OF THE BRAIN.—Dr. Brown-Séquard (*Progrès Médical*, 1876, no. 8), records that, after injuries of the corpus striatum, crus cerebri, or spinal cord, softening and ulceration of the gastric mucous membrane occur ; hæmorrhage generally after injury of a certain part of the pons Varolii. There is no hæmorrhage after paralysis of the vaso-motor nerves ; on the contrary, the arteries and veins contract, and the blood stagnates in the capillaries, which then rupture.

GENERSICH ON THE PACINIAN BODIES FOUND IN THE HUMAN COELIAC PLEXUS.—A. Genersich (*Wiener Medicinische Jahrbuch*, 1876, p. 133) investigated the Pacinian bodies occurring in the coeliac plexus in the bodies of 82 individuals who died of different diseases. He found these bodies in 73 cases, their number and size being independent of sex and the disease. The size, on the contrary, had a nearly constant relation to the age of the individual. In children, and in youth, their length was about 1 to 1·5 millimètres, their breadth 0·5 to 1·0 millimètres, in more advanced life they were somewhat larger ; the largest, 3·6 millimètres long, and 2·3 millimètres broad, were found in patients over fifty. The description coincides exactly with that given by Axel Key and Retzius. The very large forms found in old individuals are produced by œdematous swelling. As the cause of this œdema, occurring independently of general dropsical swelling, the author assumes a local origin. According to him a fibrous thickening of the capsule takes place, which interferes with the return of the blood and lymph, and so produces the œdema of these small organs. As this fibrous thickening occurs especially in old age, it explains the increase in size observed to take place at this period.

In one case calcification of the artery of the pedicle had occurred without any obvious change of the terminations of the nerves ; in another case, both the stem and the interior of the Pacinian corpuscle had undergone fatty degeneration.

WM. STIRLING, D.Sc., M.D.

RECENT PAPERS.

On the Pathology and Treatment of Cerebral Diseases. By Dr. Semper. (*Journal of Psychological Medicine*, Oct. 1876.)

On the Causes of the Hypertrophy of the Vascular System in Granular Degeneration of the Kidney. By Dr. Saundby. (*Edinburgh Medical Journal*, Oct. 1876.)

Remarks on the Spirillæ observed in Relapsing Fever by Obermeier. By Dr. C. Weigert. (*Deutsche Medizinische Wochenschrift*, Oct. 7, 14, and 21, 1876.)

Extraordinary Case of Intracardiac Cyst. By Dr. Edgar

Holden. (*American Journal of Medical Sciences*, Oct. 1876.)

On Traumatic Lesions of the Cervical Sympathetic Nerve. By Dr. A. Seeligmüller. (*Allgemeine Wiener Medizinische Zeitung*, Oct. 17.)

MEDICINE.

PAOLUCCI ON A CASE OF EPIDEMIC CEREBRO-SPINAL MENINGITIS WITHOUT SYMPTOMS.—Dr. Gaetano Paolucci relates in *Il Morgagni* for May the case of a young man, aged twenty-one, who had previously suffered from cutaneous eruptions, oœna, articular rheumatism, frequent epistaxis, and latterly from precordial pain with fever. He was admitted to hospital on the fifth day of his illness, having presented subjective symptoms of pneumonia of the left lung ; and, on physical examination, lobar pneumonia of the base of that lung was found. The area of cardiac dullness was increased, more in the longitudinal direction ; the sound over the bicuspid valves was very weak, that over the sigmoid valves was accentuated, and friction-sound was heard. The spleen and liver were enlarged. The pulse was frequent and small ; the strength was much reduced ; there was severe pain at the lower part of the chest on the left side, increased by pressure, by coughing, and by deep inspiration. The temperature, which was high, fell on the tenth day, but suddenly rose again with equal intensity. The patient died on the tenth day after admission.

At the necropsy, pneumonia, pleurisy, and dilatation of the heart were found. But, besides all this, there was the most classical form of epidemic cerebro-spinal meningitis ; the pia mater of the whole brain, especially at the convexity, was strongly congested, thickened, and covered with a fibrino-purulent exudation of greenish-yellow colour, filling the subarachnoid space. These appearances, less in degree, were observed also in the internal aspect of the cerebral hemispheres, on the upper surface of the cerebellum, on the medulla oblongata, and the upper part of the spinal cord. They were found of slight intensity in the cervical portion of the cord, but became more distinct in the dorsal and lumbar regions, and were most intense in the cauda equina, where a large collection of fibrino-purulent fluid was found between the arachnoid and pia mater. There was some exudation along the choroid plexus in the lateral and third ventricles of the brain.

Here was a case of extensive meningitis without symptoms, with no obscuration of consciousness, no intense headache, no jactitation, no muscular contractions or paralysis, no painful sensation in the extremities, no cutaneous hyperæsthesia or anæsthesia, no disturbance of the special senses. There had been vomiting—not spontaneous, however, but when the patient took turpentine.

In attempting to explain this case, two hypotheses may be put forth ; either there was congenital atrophy of the brain, allowing the exudation to take the place of the serum without producing symptoms, or the cerebro-spinal meningitis had already run its course when the patient was admitted, the exudation alone remaining.

A. HENRY, M.D.

COLLINS ON PERFORATING ULCER OF THE DUODENUM.—Dr. Daniel F. Collins relates (*New York Medical Record*, October 9), the case of Jacob

Wenzel, aged thirty years, of low stature, and stoutly made, who, while working in a factory, was hurt by the falling of a piece of lumber. He was confined to his bed for one week with pains in his stomach, hips, and chest, from which, he said, he completely recovered.

On June 20, 1874, about one year from the date of the above occurrence, he was suddenly attacked, while at work, with pain in his stomach, vomiting, and weakness. On June 23, Dr. Collins was called to see him in haste. On arriving at his house he was found sitting up in a chair, breathing with difficulty; face pale; skin of a dirty yellow colour, and quite cold and clammy to the touch. Pulse 60, and very weak. He was vomiting every few minutes, and could not retain even a spoonful of cold water on his stomach. On examination, the abdomen was found to be very much distended and hard, and on pressure being made he complained of great pain over his stomach. He stated that his bowels had not moved for four days, although he had taken medicine.

After ordering some medicine to check the pain and vomiting, and an injection to relieve his bowels, Dr. Collins cautioned him against taking large drinks of ice-water and milk, which he had been doing all day; being unable to retain anything on his stomach, the vomiting caused by these drinks very much increased his suffering and danger. Next day he got out of bed about six o'clock in the morning, walked across his room and drank nearly a pint of iced milk, and in returning back to bed fell on the floor and expired in a few seconds.

At a *post mortem* examination, nine hours after death, about three inches below the pylorus, on the anterior surface of the duodenum, there was found a perforation half an inch long by one-eighth of an inch wide. The edges of this perforation were even, and presented but a slight trace of inflammatory action; the appearance of the intestine around the perforation was natural. The intestines contained a quantity of fetid fluid.

THOMAS ON TEMPERATURE IN TETANUS.—Dr. Thomas, in his *Thèse de Paris*, 1876, relies on the researches made some time since, and as the conclusion of an excellent monograph, formulates his 'considerations on temperature in tetanus,' which he supports by fourteen cases which have come under his observation. He has thence been able to remark that there is always elevation of temperature either at the beginning or the end. Hence he formulates the conclusion that elevation of temperature in tetanus is constant. But according to the analysis of the cases it has been impossible to assign a cause for the elevation of temperature in cases of spontaneous tetanus. This elevation of temperature in traumatic cases may be due to an intercurrent disease or to a traumatic complication. In the great majority of cases followed by death, the notable elevation of the temperature during the last moments in tetanic patients is due to the development of an important pulmonary lesion. It is indeed impossible in the present state of science to recognise any one cause for the elevation of temperature in tetanic patients.

RECENT PAPERS.

A Case of Hysteria in the Male. By M. Aussilloux. (*Montpellier Médical*, Sept. 1876.)
On Malta Fever. By Dr. J. Lane Notter. (*Edinburgh Medical Journal*, Oct. 1876.)

Clinical History of a Case of Tumour of one of the Peduncles of the Cerebellum. By Dr. L. Carpani. (*Lo Sperimentale*, Oct. 1876.)
Progressive Atrophic Paralysis. By Dr. G. Silvestrini. (*Ibid.*)
Tuberculous Laryngeal Perichondritis. By Dr. M. Schaeffer. (*Deutsche Medicinische Wochenschrift*, Oct. 21 and 28.)
Spasm of the Bronchial Muscles. By Dr. J. Caspary. (*Ibid.* Sept. 23 and 30.)
On the Position of Tracheotomy in Croup. By Dr. M. Schüller. (*Ibid.* Sept. 9 and 16.)
Two Cases of Intestinal Obstructions with Fæcal Vomiting: Recovery. By Dr. L. Popp. (*Ärztliches Intelligenz-Blatt*, Sept. 26.)
Thrombosis of the Right Ventricle, extending into and occluding the Pulmonary Artery, consequent upon Rheumatic Inflammation; Chorea: Convulsions; Death. By Dr. A. B. Isham. (*American Journal of Medical Sciences*, Oct.)
Case of Hepatic Abscess. By Dr. Olof Page. (*Ibid.*)
Report on the Treatment of Typhoid Fever by Brand's Method. By M. Humbert Mollière. (*Lyon Médical*, Oct. 15.)
A General Review of Delirium in Acute Articular Rheumatism. By Dr. Desnos. (*Gazette Médicale de Paris*, Oct. 14.)
On the Employment of Salicylic Acid in the Treatment of Acute Articular Rheumatism. By Dr. A. Baréty. (*Nice Médical*, Oct. 10, 1876.)
Pulse and Temperature in Cancer. By Dr. Thaon. (*Ibid.* Oct. 10.)
Note on the Temperature of the Peripheral Parts in Febrile Diseases. By Dr. Couty. (*Gazette Médicale de Paris*, Oct. 21 and 28.)
On a Case of Tic-Douloureux of the Face, of Twenty-eight Years Standing cured by Bromide of Potassium. By Dr. Peter. (*Bulletin Général de Thérapeutique*, Oct. 30.)

DISEASES OF CHILDREN.

SIMON ON IODINE AND ITS PREPARATIONS IN THE THERAPEUTICS OF INFANCY.—In an exhaustive clinical lecture on this subject, delivered at the Paris Hospital for Children (*Moniteur Thérapeutique*, August 7), M. Jules Simon lays particular stress on the following points. Tincture of iodine should not be applied pure in tubercular children; it should be diluted either with glycerine or with some unguent. Neither iodide of potassium nor iodide of iron should be given to children under two years of age, except perhaps in cases of acute hereditary syphilis, where small doses may be administered. It may be given to the nurse, if the child have not been weaned. Older children bear the drug well. Those who are especially benefited by it are patients robust in appearance, but with soft inelastic flesh and with manifestations of incipient scrofula. Iodoform is of great service in cases of ozena and scrofulous wounds. Albuminuria has been observed by M. Simon in a large number of cases to follow paintings of the surface with tincture of iodine, especially when applied to eruptions. Iodide of potassium produced the same result, but in a smaller degree. On this head, further investigations are promised.

LÖWENSTAMM ON A CASE OF POSTPHARYNGEAL ABSCESS.—In the *Medicinisch-Chirurgisches Centralblatt*, no. 35, Dr. Löwenstamm describes a case in a boy aged three years, previously quite healthy. For a week before he was seen, he had been feverish and had had difficulty in swallowing and in breathing. Rude attempts had been made to raise what was looked upon as a displaced tonsil. The child was pale, the mouth wide open, the head retracted, and the breathing difficult and snoring. A deeply seated swelling was seen behind the left angle of the jaw. On examining the throat, the

posterior wall of the pharynx showed a prominence which, towards the left side, had a yellowish colour; fluctuation was distinct at this part. The cervical glands and the vertebræ appeared quite healthy. The parents, at first, refused consent to an operation, and it was not until the child was in imminent danger of suffocation that this was undertaken. An incision was made and the flow of pus accelerated by pressure upon the swelling in the neck; afterwards the throat was syringed with lukewarm water. Recovery was complete.

BOUCHUT ON MULTIPLE ABSCESSSES OF THE CELLULAR TISSUE IN INFANTS.—M. Bouchut (*Gazette des Hôpitaux*, August 1, 1876), after remarking upon the rarity of this affection, points out that the abscesses may be produced under the influence of three diatheses; the scrofulous, the syphilitic, and 'the puerperal.' In the puerperal form, nodules develop under the skin, which then reddens and becomes thinner and painful. The nodules, at first hard, rapidly soften, and fluctuate, and, finally, unless previously incised, burst. Suppuration takes place much more quickly in this than in the other two forms. In the syphilitic variety, the child has usually already been cured of the commoner manifestations of syphilis, small, hard, slightly movable, nodules (gummata) then appear in the subcutaneous tissue. They pass through the same stages as those of the preceding form, but do not burst for perhaps two or three months. After the discharge of the pus, which is small in quantity and of a yellowish sanious character, the opening remains livid and fistulous for some time prior to closing. If the abscess be situated over a bone, the periosteum is destroyed and the bone exfoliates. The scrofulous form generally occurs between the eighth and the fifteenth year. It is very rarely seen in the first year of life. It begins with very small subcutaneous nodules scattered over the trunk and limbs and less commonly over the face. After having remained stationary for some time, they increase in volume, soften, fluctuate, and break, with a discharge of thick greenish pus. A fistula results, and this, with its reddish livid orifice remains open for several months and leaves a depressed scar, which for a long time is coloured. The treatment of the puerperal form consists in the removal of the child from the mother, the application of linseed poultices, and, as soon as fluctuation is felt, the incision of the lumps. The syphilitic and scrofulous forms should be treated respectively with iodide of potassium and cod-liver oil, etc.; and, while the nodules are hard, iodide of lead ointment should be applied. Four cases are appended.

LÖWENSTAMM ON CHLORAL IN INFANTILE CONVULSIONS.—Löwenstamm (*Medicinisch-Chirurgisches Centralblatt*, no. 35, 1876) speaks of numerous instances in which he has tested the efficacy of this drug in convulsions; and he gives one case in detail. The patient was the third child of a highly nervous woman, who had lost her first and second children from this affection at about the same age as that at which this one was attacked. At the thirteenth day, twitchings of the eyelids and of the angles of the mouth were first observed; these rapidly developed into more general convulsions, which were repeated, later, every ten minutes. The infant was first seen on the sixteenth day of life. He showed then strong twitchings of the face, trismus, clonic spasms of the

limbs, spastic contractions of the thumbs, and contracted pupils; the fit terminated, at the end of five minutes, in profuse perspiration. Two grains of chloral-hydrate were given every hour. The convulsions diminished in frequency and intensity, and, on the following day, he was free from them. As the case was considered to depend upon dyspepsia, an antacid in the form of *magnesia usta* was then given, and no recurrence took place.

LEDERER ON FIRST DENTITION IN ITS CAUSAL RELATION TO DISEASE.—Dr. Lederer points out in this paper (*Allgemeine Wiener Medicinische Zeitung*, May 2 and 9) the slender grounds upon which many disorders of childhood are attributed to dentition. He remarks that the most powerful factor in the retardation of the teeth is rickets, and that it is precisely in rickety children that these disorders—bronchial and intestinal catarrh, laryngismus stridulus, convulsions, etc.—are most frequent. During his five years' connection with the Vienna Children's Hospital, he noted ninety-six cases of laryngismus, and of these, ninety-two were in rickety subjects. He further quotes Luzinsky as having observed 504 cases of pulmonary and intestinal affections in rachitic children who showed no sign of teeth. Dentition, moreover, gives no causal indication for treatment; the conditions are far more effectually dealt with according to general rules. The theory is, therefore, useless; but it is even worse than useless, because it frequently leads mothers to defer applying for medical assistance until the case is too far gone, and it engenders in others a carelessness which is most prejudicial to the patient's welfare. Dr. Lederer, therefore, without denying its occasional importance, believes that it is rarely anything more than an exciting cause, which, without special predisposing influence, would be powerless.

RALPH W. LEFTWICH, M.D.

ARCHAMBAULT ON THE TREATMENT OF UMBILICAL HERNIA IN CHILDREN.—In the *Paris Médical*, October 12, is a description of M. Archambault's treatment of umbilical hernia in children. In order to avoid the inconvenience of bandages with buttons, etc., so difficult to keep in their place, M. Archambault takes a piece of white wax, which he softens and rolls between his fingers; this ball is then split in two, so as to constitute two hemispheres. One of these hemispheres, of a size proportionate to the extent of the umbilical depression, is placed with its convex surface in the depression and maintained there by a piece of strapping. For the wax may be substituted gutta percha previously moistened in warm water. At the end of two hours the body will be sufficiently softened to adhere to the skin. From this time no bandage will be required. In this manner M. Archambault has cured umbilical hernia in less than two months.

W. DOUGLAS HEMMING.

RECENT PAPERS.

On Intermittent Fever in Young Children. (*L'Union Médicale*, Aug. 19.)
Genital Irritation as a Cause of Nervous Disease, with reference more particularly to a new form of Muscular Spasm of the Flexors of the Lower Extremities, met with in Young Children. By Allan McLane Hamilton. (*American Journal of Medical Sciences*, Oct. 1876.)

SURGERY.

BERGER ON ACUTE THYROIDITIS.—The following case is reported in *La France Médicale*, no. 66, 1876. On August 4, 1876, a man, aged forty-six years, was admitted into the Hôpital de la Pitié under the care of Professor Verneuil, with phlegmonous swelling of the whole of the subhyoid region, accompanied by severe constitutional reaction. The affection commenced on the morning of August 1, when the patient, immediately after an attack of hæmoptysis, felt deep-seated pain in front of the neck, which pain was increased by movements of deglutition, and associated with marked dysphagia. The swelling increased rapidly in the course of the day, and became very tender. In the evening, respiration was much impeded, and there was intense fever, accompanied by congestion of the face and violent pulsation of the temporal arteries. These symptoms increased in severity during the three following days. At the time of the patient's admission, the congested face was bent forwards through the action of the sterno-mastoid muscles. There was enormous swelling of the whole pre-tracheal region; the tense skin presented an erysipelatous redness, and the affected region was very tender. On digital examination, a hard deep-seated tumour could be felt, over which the inflamed and oedematous integument could be moved. This tumour seemed to pass under the sterno-mastoid muscles and downwards behind the sternum. The neck could not be moved by the patient, and communicated movements were much restricted and caused intense pain. The respiration was interfered with, and deglutition rendered very difficult. In establishing a diagnosis in this case, glandular inflammation was at once excluded, as such an origin was contraindicated by the extent of the affection, by its commencement in the median portion of the neck, by its diffusion, by the absence of any starting-point of adenitis, and by the acute course of the inflammation. There remained, however, much doubt as to whether the case were one of extensive phlegmon or of acute thyroiditis. In order to remove this doubt, attention was directed in the first place to the physical sign mentioned by most surgical authors, and especially by M. Bauchet, viz., associated elevation of the tumour and the larynx and trachea during movements of deglutition. In this case, it was made out that neither the larynx nor the tumour moved during deglutition. This immobility of the larynx in cases of acute thyroiditis had, however, been previously observed by M. Gosselin, who attributed the absence of a sign generally considered as pathognomonic of affections of the thyroid gland, to prevention of movements of deglutition and of elevation of the larynx through inflammatory swelling and induration, and through muscular spasm excited by pain from such attempts. It became necessary, therefore, to investigate other signs before making a precise diagnosis. Extensive phlegmon was indicated by the diffused swelling, the deep-seated, hard, and irregularly circumscribed oedema, the erysipelatous blush, and the extension of the swelling to neighbouring parts. In favour of the diagnosis of thyroiditis, there were three rational symptoms: the preceding attack of hæmoptysis, which from the absence of any pulmonary lesion had been evidently caused by congestion of the larynx and trachea; next, the impeded respiration;

and, thirdly, the extreme dysphagia. In seeking for other reasons in favour of one or the other hypothesis, Professor Verneuil did not overlook the facts that thyroiditis is an exceptionally rare affection in the male, and that it hardly ever occurs save in the subjects of hypertrophy or cystic disease of the thyroid body, or in the inhabitants of a region where goitre is common. The patient had resided in a department where hypertrophy of the thyroid gland is frequently met with, and he stated that his neck had always been large. The case was finally diagnosed as one of thyroiditis, and the correctness of this view was confirmed by the subsequent course of the affection. After the application of a few leeches the swelling speedily subsided, the pain ceased, and the movements of deglutition and respiration became free. On August 12 the patient was discharged from the hospital as cured, but then presented a well-marked goitre. The following conclusions were drawn from the facts connected with this case. 1st. Thyroiditis may assume the external characters of a large subaponeurotic phlegmon of the neck. 2nd. The diagnostic signs based on the circumscribed condition of the tumour, on its form and seat, and on its elevation during movements of deglutition, are not always present, or at least cannot in all cases be made out. 3rd. The diagnosis should be based mainly on the difficulty in deglutition, on respiratory disturbances and on altered phonation; it is necessary also to inquire as to the recent occurrence of an attack of hæmoptysis. 4th. The pre-existence of thyroidean hypertrophy, and the previous residence of the patient in a goitre-district, constitute strong presumptions in favour of thyroiditis. 5th. Local bleedings, practised early and freely, are probably of some efficacy in cases of this kind.

SCHÜLLER ON INJURIES TO THE SHOULDER.—Dr. M. Schüller, of Greifswald, in a contribution to the *Berliner Klinische Wochenschrift*, no. 37, 1876, on a simple guide to the differential diagnosis between fracture of the neck of the humerus and subcoracoid dislocation, alludes in the first place to the difficulty occasionally experienced by surgeons in distinguishing the one injury from the other, especially in fracture near the upper end of the humerus, in which the lower fragment, the shaft of the bone, is displaced inwards and into the axilla, whilst the upper fragment, the head of the bone, remains in the glenoid cavity. In this form of injury, which usually consists in fracture of the surgical neck of the humerus, the long axis of the arm runs obliquely inwards towards the coracoid process, the elbow stands away from the side of the trunk, and the deltoid muscle is flattened or even concave on its outer surface—all signs of forward dislocation of the head of the bone. In many instances a fracture may be readily diagnosed, partly through crepitation, partly from a determination of the characteristic form of the end of the lower fragment, and of the presence of the upper fragment just below the acromion. Occasionally, however, a precise diagnosis of this injury may be rendered impossible through much effusion of blood, absence of crepitation, and the small dimensions of the upper fragment. Attempts at reduction performed again and again are in such a case always followed by an immediate return of the abnormal condition of the shoulder. Sometimes it happens that in one of these attempts at reduction the surgeon is able to make out crepitus, and then assumes that he has himself produced the

fracture through the application of too much force. The author holds that under ordinary conditions it is impossible to produce fracture of the neck of the humerus in an attempt to reduce a dislocation at the shoulder. It often happens, however, that in a case of old fracture of the neck of the humerus, mistaken for and treated as a case of subcoracoid dislocation, the fragments are again separated in an attempt at reduction. The author does not altogether disapprove of the administration of chloroform in cases of doubt, but holds that apart from the fact that there may be cases in which the doubt cannot thus be cleared up, it would be more desirable to have some means of making the diagnosis surely and safely without anæsthesia. The method suggested as very simple and ready in its application is that of measuring the injured extremity, and especially the distance between the acromion and the point of the epicondyle. In every case of fracture of the neck of the humerus this distance is shorter on the injured than on the sound side, and this shortening is greatest in those cases which most resemble subcoracoid dislocation of the head of the bone. In this latter injury the distance between the above-mentioned anatomical points is increased. The author does not agree with Malgaigne, who held that this increase in the length of the arm is not constantly met with in cases of dislocation. There is no difference of opinion, however, as to shortening of the arm in every case of fracture of the neck of the humerus with displacement of the shaft inwards. Shortening, which in this injury is usually considerable, is, as was acknowledged by Malgaigne, never met with in cases of dislocation. The author, when measuring the distance between the acromion and the external epicondyle, takes care that the arm is abducted, and the forearm flexed at a right angle. The round extremity, when measured, is placed in a similar position. The tape is then carried to the external condyle from the same point of the acromion on each side, and from either its anterior or its posterior angle.

W. JOHNSON SMITH.

BROWN ON THE PATHOLOGY OF BURNS AND THEIR RATIONAL TREATMENT.—Dr. Bedford Brown, of Alexandria, Virginia, writes as follows in the *Philadelphia Medical Times*. The first impression made upon the general system by the local action of intense heat is that of nervous shock. This condition is clearly understood. But there are certain coincidental morbid phenomena associated with shock, which are of more importance and less comprehended.

In those cases of excessive nervous shock caused by extensive burns, thrombosis of the heart and large veins entering the right side of that organ not unfrequently occurs. There are peculiar reasons why thrombosis should be a more common result of shock from burns than from almost any class of injury, this phenomenon being due to a combination of causes, one in the form of excessive nervous depression, the other from disorganised blood from the local action of heat which has been conveyed from the burned tissues to the centre of circulation. A few disorganised blood-corpuscles or a small portion of coagulated fibrin, or albumen, when carried into the general circulation, at once become nuclei for the formation of thrombosis of the heart and great vessels.

Hence the necessity of accurate diagnosis between simple nervous shock and thrombosis. In simple

shock the pulse, though exceedingly feeble, is not usually much accelerated, and is generally regular in rhythm. The cardiac sounds are very feeble, but distinct. The temperature is greatly reduced; the complexion is pallid; the respiration is but little increased in frequency, and there is an absence of præcordial distress, though nausea may be present.

On the contrary, in shock with thrombosis, the breathing is painfully laboured, and frequent. The action of the heart is tumultuous, irregular, feeble, and very frequent. The complexion is livid, while the skin is cold and bathed in perspiration; præcordial distress is painful, and the cardiac sounds almost obliterated.

There cannot be a rational doubt that death following extensive burns directly is often the immediate result of cardiac thrombosis.

Secondary Stages of Burns.—Following the reaction after the first shock to the nervous system has passed off, probably capillary embolism and its legitimate consequences constitute one of the chief causes of mortality. Here, as in thrombosis, those properties or rather constituents of the blood whose vitality has been destroyed in the burned tissues, not only become a septic source, but, after passing through the large veins and heart, find lodgment either in the pulmonic or the portal circulation, producing blood-stasis, hyperæmia, inflammation, and suppuration. Hence we generally see these peculiar phenomena in one or the other of these two circulatory systems. It is sometimes witnessed in the cerebral circulation, when symptoms of congestion, with active delirium, and finally coma, are prominent.

Thus we may have in the pulmonic system, as a result of capillary embolism, chill, followed by either pleuritis, pneumonitis, or abscess, with inflammatory fever; in the portal system, peritonitis, ulceration of the intestines, with either diarrhoea or dysentery, and abscess of the liver. In many of these cases all the characteristics of true pyæmia are developed. These microscopic embola appear not unfrequently to manifest a tendency to find lodgment in the mucous surface of the small intestine—for instance, the duodenum—and then induce ulceration. This is probably due to an effort of nature to eliminate them from the circulation. As evidence of the fact that mere extent of burned surface is not always the cause of death, numerous instances of very extensive burns have come under the observation of the writer, which were progressing favourably in the healing process, when suddenly symptoms of capillary embolism, congestion, and inflammation of some internal organ, or ulceration with dysentery, appeared and speedily terminated the case.

On the Local Changes in the Tissues from Burns.—No other variety of injury either from mechanical or chemical cause is attended with such protracted and unceasing pain as that from burns. We often see far greater destruction of tissue from other causes followed by but little pain, and which are much more rapidly healed. This peculiarity of burns is doubtless due both to the exposure and injury of the terminal branches of sensitive nerves. The constant tendency to contract in burned tissue, whether vascular or fibrous, produces unceasing pressure around these inflamed nervous termini, and causes incessant pain, until finally, by this compressing process, their organisation is destroyed, as is indicated by the great want of sensibility in the cicatrix.

While it is true that the destruction of vascular

and fibrous structures by the action of intense heat is a leading difficulty in the way of healing these wounds, the irritation constantly present caused by the myriads of inflamed and sensitive nervous branches is equally a cause of protracting their progress. Then, in the healing process of burns, painfulness and contractility are among the distinguishing features.

This is true even of the granulations which form the new tissue. They are firm, more cartilaginous, more sensitive and painful, and their structure more contractile than any other. Here again, may not this in part be due to those minute bulbs of the inflamed nervous branches keeping up an unceasing irritation?

This peculiar contractility of burned tissue not only tends to obliterate the nervous branches entering it by compression, but also tends to diminish the calibre of capillary vessels to such an extent as to comparatively unfit them as the carriers of blood-corpuscles. Hence this newly formed cicatricial structure is reduced somewhat to the standard of cartilage, and is no longer subject to those active vital operations of disintegration, waste, and renewal to which other more vital tissues are. Therefore, whatever form they assume is permanent. In this manner the nervous supply is curtailed, causing a diminished sensibility and circulation in the cicatrix.

General Treatment of Burns.—In the treatment of simple primary shock, while all concede the necessity for anodynes, the free use of diffusible stimuli and the sulphate of quinine are of great importance. The process of nervous shock in these cases has some analogy to chill, as when reaction returns it is disposed to assume the form of fever. The quinine in such cases not only aids in restoring reaction, but it also moderates it, and prevents a high degree of febrile excitement.

In shock with cardiac thrombosis, opiates are dangerous. Quinine in large doses is too depressing, but in small quantities is useful. Ammonia in the form of the liquor, with iodide of potassium, and alcoholic stimulants, constitute the most important remedies.

Those cases of hectic fever arising during the progress of very extensive burns with copious suppuration, are best treated with a combination of tincture of the chloride of iron, chlorate of potash, and quinine. For instance, in a case of burn where the entire cutis from the toes to the hip was destroyed, the entire surface of the limb became a mass of suppurating granulations, the amount of pus excreted daily being enormous. Hectic fever, with great exhaustion, followed. This method of treatment was adopted, and in a month the hectic symptoms had disappeared, the suppuration subsided, and the extensive injury rapidly healed. In those cases of internal inflammation, suppuration, or ulceration arising from capillary embolism either with or without symptoms of pyæmia, those remedies are equally valuable, but they should be associated with antiseptics of a decided character; carbolic acid in the form of sulpho-carbolate of sodium is probably one of the best adapted of all this class for internal use. The external use of the acid owes its chief value to its antiseptic action over the system when absorbed. The question of sepsis in burns is a much more important one than is generally supposed.

Local Treatment.—Of all local applications, in the experience of the writer, iodoform, prepared with

extract of conium, and spermaceti ointment, with a small portion of carbolic acid, appears to meet the several indications best.

This agent acts as a certain and most effective sedative on the painful and irritable exposed surface, and at the same time as an antiseptic. It reduces irritation, inflammation, and suppuration when in excess, in a remarkable manner. It converts a most painful and irritable wound into one comparatively painless with promptness.

This remedy is also an excellent promotive of healthy action and of the healing process. The use of this preparation has another advantage: it renders the constant use of anodynes unnecessary. The following formula has been found the best:

R. Iodoformi, ʒij
Unguent. cetacei, ʒj
Ext. conii, ʒjss;
Acid. carbol. gtt. x.—M.

This ointment is spread twice daily on soft linen, and applied over the inflamed surface, and then enveloped in oiled silk. No other dressing is necessary. The only objection to the use of this remedy is its peculiar odour. In those cases of burns attended with great dryness of surface from destruction of vitality and want of exhalation, the wound, before being covered with the iodoform ointment, should be coated over with the common linimentum calcis. This affords a soft and moist dressing, which in no wise interferes with the action of the iodoform.

RECENT PAPERS.

- Note on a Case of Regeneration of the Bone. By M. Daniel Mollière. (*Lyon Médical*, Oct. 8.)
On Ganglionic Tumours of the Cervical Region: Lymphadenoma: Lymphosarcoma. By M. Duplay. (*Le Progrès Médical*, Oct. 7.)
On the Diagnosis and Treatment of Suppurating Osteomyelitis. By Dr. Eug. Boeckel. (*Gazette Médicale de Strasbourg*, Oct. 1.)
On a Case of Tracheotomy for the Removal of a Pin penetrating the Larynx. By Dr. G. Marcacci. (*Lo Sperimentale*, Oct. 1876.)
Extirpation of the Lower End of the Rectum. By Dr. A. Ceccherelli. (*Ibid.*)
Varicose Veins successfully treated by Parenchymatous Injections of Chloral. By Dr. A. Pupi. (*Ibid.*)
Secondary Hæmorrhage after the Use of Esmarch's Apparatus. By Dr. Küpper. (*Deutsche Medicinische Wochenschrift*, Oct. 28.)
Operations on the Joints in Private Practice. By Dr. J. Merkel. (*Erztliches Intelligenz-Blatt*, Oct. 17.)
A Rare Injury of the Skull. By Dr. Barlach. (*Allgemeine Wiener Medizinische Zeitung*, Sept. 26.)
Femoral Aneurism treated by Plugging the Sac; Death, caused by Hæmorrhage from Deep Epigastric Artery, on the Eighteenth Day. By Dr. B. A. Watson. (*American Journal of Medical Sciences*, Oct. 1876.)
A Case of Dislocation of both Hips. By Dr. J. B. Crawford (*Ibid.*)
Report of a Case of Fracture of the First, Second, Fifth, and Sixth Cervical Vertebrae, with Recovery and Autopsy. By Dr. C. S. May. (*Ibid.*)
Case of Gunshot Wound of the Right Knee-Joint and Right Hand. By Dr. George M. Kober. (*Ibid.*)
Traumatic Aneurism of Right Common Carotid. By Dr. G. E. Frothingham. (*Ibid.*)
On Artificial Bloodlessness in Operations. By Dr. Riedinger. (*Allgemeine Wiener Medizin. Zeitung*, Oct. 17.)
On Fracture of the Cartilages of the Larynx. By Dr. G. Scheff. (*Ibid.*)
The First Successful Operation of Gastrotomy. By M. Verneuil. (*Gazette des Hôpitaux*, Oct. 28.)
A Study on the Results of Medio-tarsal Amputation. By Dr. Jousset. (*Bulletin Général de Thérapeutique*, Oct. 30.)

MATERIA MEDICA AND THERAPEUTICS.

PAVESI ON THE ANTIZYMOTIC TREATMENT OF DIPHTHERIA.—Dr. Pavesi describes, in the *Annali di Chimica Applic. alla Medicina*, 1876 (abstract in *Annali Universali di Medicina*, August), a formula which he recommends in the treatment of diphtheria. It is founded on the antizymotic properties of chloral, salicylic acid, and the sulphites. It is as follows: \mathcal{R} Chloral hydrate, salicylic acid, glycerine, sulphite of soda, each $1\frac{1}{2}$ parts; distilled water, $3\frac{1}{2}$ parts; spirits of wine, 1 part. The whole is put into a strong glass vessel, which is closed, and exposed to a heat of 100° to 120° Fahr. for a few minutes, until the sulphite, salicylic acid, and chloral are completely devolved. A homogeneous solution is produced, which is filtered through bibulous paper, and preserved in a well-closed vessel. It is an oily, limpid, colourless liquid, having the odour of its constituent parts. It is insoluble with water. On the application of proper tests, the chloral, salicylic acid, sulphite of soda, and glycerine are found to be unchanged.

Used both internally and externally, it is an energetic antiseptic, antifermentative, disinfectant, hæmostatic, and preservative, as well as a destroyer of parasitic organisms. Dr. Pavesi says that it may be used as an antiseptic, and also as a sedative, in a large number of diseases.

FERA ON THE USE OF SULPHATE OF IRON IN DIPHTHERIA.—In an article in the *Gazzetta Medica delle Calabrie* for January (abstract in *Annali Universali di Medicina*, August), Dr. Fera asserts that he has treated eighty cases of diphtheria successfully, without one death, by the local application of powdered sulphate of iron. He describes the mode of treatment in the following terms.

A brush is made of horsehair, which is cut at a distance of 3 or 4 millimètres (about $\cdot 12$ or $\cdot 16$ inch) from the handle. The brush is then dipped in very finely powdered sulphate of iron, and can be easily applied to the diphtheritic patches on the tonsils, pharynx, and velum pendulum palati, or elsewhere. Sometimes the brush is applied energetically to the diphtheritic area, until it bleeds freely; the pearly colour of the diphtheritic exudation at once disappears, and the surface becomes red, or some portions of the area may be covered with mucus, which is detached by the next application. The application is made twice daily. After the first or second, the febrile temperature is gradually lowered; the enlargement of the cervical glands is reduced and entirely disappears; and in three or four days the patients are well.

TIZZONI ON THE LOCAL ACTION OF CHLORAL HYDRATE.—In an article in *L'Indipendente*, no. 6, 1876, Dr. Guido Tizzoni of Pisa observes that the first effect of the application of solution of chloral hydrate to parts deprived of epidermis and epithelium is a transient irritation, varying in degree with the strength of the solution. This is followed by an anæsthetic action, in regard to which the observations of Drs. Coignard, Horand, and Puech, have been confirmed by the author.

The irritant action favours the development of cellulo-vascular granulations, and accelerates the cicatrization of solutions of continuity. The chloral

acts also as an astringent, and as an antiphlogistic. The irritant action, which is generally of brief duration, having ceased, there is in a few hours an arrest of the inflammatory processes, including suppuration: this appears due to the retardation of the circulation and the constriction of the capillaries, as well as to minute coagula and embola, which are found in the vessels and cut off or diminish the local supply of blood—a fact which has been established by the experiments of the author and of Dr. Fogliata.

The most important properties of chloral in surgery are those which it possesses as a disinfectant, antiseptic, antiputrescent, and antifermentative remedy. The author has used it for the preservation of flesh, milk, urine, etc.; no change being perceived at the end of two months. He recommends chloral in ordinary surgical practice, as a preservative against local and general infection, and as a restrainer of suppuration.

He describes the experiments and clinical observations which he has made with regard to the action of chloral, especially as an antiputrescent. The ultimate results were always the same, differences depending only on the amount of chloral used. The solution which he employs is one of ten parts of chloral in fifteen of water.

He has treated, both in hospital and in private practice, many cases of acute and chronic urethritis with injection of chloral hydrate, in the manner recommended by Parona, and has found the result to be rapid cessation of the discharge, and cure of the disease without complications.

CAVAZZANI ON CAMPHORATED ETHER IN ERYSIPELAS.—Dr. Cavazzani gives the following formula in the *Gazzetta Medica Italiana Provincia Venete*: \mathcal{R} : camphor, 15 grains; tannin, 15 grains; ether, 2 drachms. This is painted every three hours, and sometimes oftener, over the affected parts. The author says that he has never seen this method fail, even in the most severe cases, in which ataxic and adynamic symptoms had already appeared. The fever soon diminishes, and the local erysipelatous process is arrested in two or three days.

In some cases of phlegmonous erysipelas, which Dr. Cavazzani had under his care, this treatment arrested the progress of the disease. Trousseau prescribed this drug only in cases of circumumbilical erysipelas in new-born children, and Guibout did not use this solution in phlegmonous erysipelas or in that affecting the face, fearing in the latter case that the meninges would become affected. In seeking an explanation of the action of the remedy, Dr. Cavazzani supposes that erysipelas is nothing else than a lymphatitis, and that the tannin exercises an astringent action on the cutaneous capillaries.

A. HENRY, M.D.

JERUSALIMSKY ON THE PHYSIOLOGICAL ACTION OF QUININE.—According to N. Jerusalemky (Berlin: Hirschwald, 1875, and abstract in *Centralblatt für die Medicinischen Wissenschaften*, no. 26, 1876), quinine given in small and medium doses (1 to 5 grains) always causes in dogs (rabbits and frogs are less suited for these experiments), an increase in the frequency of the pulse; it may be even doubled and more. Variations occur—but it never falls under the normal. The pulse sinks rapidly just before death. The blood-pressure, on the contrary, has in general the tendency to fall; only after each injection there is a short period, where, with varia-

tions, it rises somewhat; then it gradually falls under the normal, though not far under, as long as no large doses are given. Large doses (20 to 25 grains) cause the pressure to sink rapidly and generally at once, but the frequency of the pulse generally after a short acceleration. The acceleration of the pulse, as is shown by special experiments (section of the vagi, of the spinal cord at different heights), is the result of a depression or paralysis of the regulating and excitation of the excito-motor nervous system.

The condition of the blood-pressure—with medium doses a short increase lasting between twenty and sixty minutes, then sinking, notwithstanding increased pulse-frequency—is explained by the author through a complicated nerve-action. The increase is caused by paralysis of the regulating and stimulation of the vaso-motor apparatus. That the vaso-motor centre in the medulla participates is supported by this, that after its destruction the increase is only feebly expressed. The effect of quinine on the vessels was ascertained by direct observations on the frog, and specially by the experiments on the spleen to be presently cited. After the excitation of the vaso-motor centre paralysis follows very rapidly, which affects the peripheral vessels, the excito-motor cardiac ganglia, and the cardiac muscles. After large doses, the heart itself does not reply to direct stimulation. The conditions here mentioned are those which follow medium doses; after small doses the tonic action, after large the paralytic, is more pronounced. In man, the author after a moderate dose (10 grains) observed acceleration of the pulse, and increased heart-beat, which in one case increased to palpitation. The cause of the difference in the results between this and other authors, the author seeks to ascribe to difference in the animal employed.

The respiration is always increased by small doses, rendered slow by large doses, and also irregular with rapidly following asphyxia. This action arises from the effect on the respiratory centre. The hyperæmia and even the hæmoptysis observed by some authors after large doses of quinine are probably due to paralysis of the vaso-motor centre by the quinine.

The action on the temperature was not constant throughout. In most experiments it sank (at most 1.5° Cent. 2.7° Fahr.); in other cases it rose, and this after large doses, and in other cases it varied little from the normal. The author explains these results by the action of quinine on supposed nerve-centres. After section of the spinal cord, 1. between the sixth cervical and first dorsal vertebra there was pronounced increase of temperature (3° to 4° Cent. 5.4° to 7.2° Fahr.); 2. in the region of the second dorsal vertebra the reverse; and 3. under the second to the sixth dorsal vertebra, only slight modifications from the normal. The author assumes the existence of a heat-exciting centre, opposite the second dorsal vertebra, and a heat-regulating centre, between the sixth cervical and first dorsal vertebra, which influence the exchange of material through trophic nerves. The author explains the modification in temperature, by the relation of quinine to these two centres. The increase after large doses would therefore be produced by paralysis of the regulating centre.

The rapidity of the blood-current (investigated by Ludwig and Dogiels' Stromuhr) is much slowed by quinine, in the proportion of 1 : 2 and more. This phenomenon is specially to be ascribed to the

paralysis of the vaso-motor centre, for after its destruction quinine can only produce a very slight retardation.

With regard to the effect of quinine on the colourless blood-corpuscles, the author confirms the statements of Binz and his scholars. He also observed cessation of the amoeboid movements; emigration and diminution in the number of these bodies. Further, he observed that the corpuscles which had emigrated had for the most part a single nucleus, whilst previously the greater number were multinucleated. Like Manasséin, he observed that the red corpuscles became larger under the influence of quinine.

Confirming Mosler, he observed also the diminution in the size of the spleen; the organ becoming at the same time tougher, granulated on the surface, and of a brighter colour. After section of the splenic nerves (splenic plexus, or semilunar ganglion or splanchnic) or of the spinal cord, which produced of course a considerable swelling of the spleen due to paralysis of the vaso-motor nerves, the effect of quinine still occurred, though to a much less extent. It therefore depends primarily on the effect of the alkaloid on the peripheral nervous and muscular elements of the spleen, and secondarily on the splanchnic and central nervous system.

WM. STIRLING, D.Sc., M.D.

SOULEZ ON CARBOLISED CAMPHOR AND ITS THERAPEUTIC APPLICATIONS.—Dr. Soulez, of Romorantin, has a paper on this subject in the *Bulletin Générale de Thérapeutique*, Aug. 30. Desiring to combine the valuable properties of carbolic acid and camphor, and founding his proceedings on the property possessed by certain acids of liquefying camphor, Dr. Soulez poured 2 grammes (30 grains) of carbolic acid solution (in the proportion of nine of carbolic acid to one of alcohol) on 12 grammes (180 grains) of camphor in powder, in successive portions, taking care to keep the mixture agitated. This produced a liquid of a syrupy consistence. Carbolic acid dissolves a larger quantity of camphor than that just mentioned, but in practice Dr. Soulez contented himself with a solution of 2.50 grammes ($37\frac{1}{2}$ grains) of powder for 1 gramme (15 grains) of acid. The product thus obtained is an oleaginous liquid with the combined odour of camphor and carbolic acid, which boils at a slightly elevated temperature without decomposing, does not mix with either water or glycerine, is decomposed by concentrated alcohol with a deposit after some hours of crystals of camphor, is miscible in all proportions with olive and almond oils, if poured in a boiling state into cold water immediately solidifies into a mass, and produces a red colour on the addition of nitric acid.

For dressings, Dr. Soulez uses mixtures of a twentieth part of carbolised camphor, either with olive oil or with infusion of saponaria (100 grammes of saponaria leaves with 1,000 grammes of water) which makes an emulsion. A square of wadding soaked in the mixture of carbolised camphor and olive oil is placed in contact with the wound, and over this six other squares soaked in the emulsion of carbolised camphor and infusion of saponaria. To prevent evaporation, these are then covered with a thin layer of gutta-percha tissue, and the whole is secured by a piece of dry wadding as a bandage. It should be added that the whole wound, whatever be its nature, is washed before being dressed, with the emulsion. Thus applied,

says Dr. Soulez, this dressing realises all the favourable conditions inherent in Guérin's and Lister's method without its inconveniences. Usually the dressing is renewed every six days, sometimes being left in its place ten days, and up to the present time not the least irritation of the skin or of the wound has been observed, which could be attributed to contact with the carbolised camphor.

Dr. Soulez then proceeds to narrate some cases in which this preparation was successfully employed, and concludes by drawing attention to the following as the advantages derived from the employment of the carbolised camphor :—1. Diminution in reaction after great operations ; 2. Cessation or lessening of pain ; 3. Less abundance of suppuration.

W. DOUGLAS HEMMING.

SMITH ON THE PHYSIOLOGICAL ACTION OF SANGUINARIN.—Dr. R. M. Smith, of Philadelphia, has made, in the Physiological Laboratory of the University of Pennsylvania, a series of 153 experiments on cats, dogs, rabbits, frogs, guinea-pigs, pigeons, etc., with regard to the physiological action of sanguinarin, the alkaloid of *Sanguinaria Canadensis*, and arrives at the following conclusion (*Amer. Journal of the Med. Sciences*, Oct., 1876.) 1. Sanguinarin destroys life through paralysis of the respiratory centre. 2. It causes clonic convulsions of spinal origin. 3. It has no effect on either the motor or sensory nerves. 4. It causes marked adynamia and prostration from its depressing action on the spinal ganglia and muscles. 5. It decreases reflex excitability through irritation of Setchenow's centre, and by ultimate paralysis of the spinal ganglia, from large doses. 6. It produces in cats, dogs, and rabbits, a fall of pulse and blood-pressure, the fall of the latter being preceded by a temporary rise after the administration of proportionately small doses. 7. The fall of blood-tension is caused by a paralysis of the vasomotor centre, and by a paralysis of the heart itself, probably of its muscular structure. 8. The temporary rise in blood-pressure is due to irritation of the vasomotor centre, previous to its paralysis, by small doses. 9. The reduction in the pulse is due to direct action of the poison on the heart, through paralysis of its motor power. 10. Sanguinarin has no action on the liver. 11. It causes marked salivation. 12. It renders the respiratory movement slow by prolonging the pause after expiration. 13. This reduction is caused by loss of tonus of the respiratory centre. 14. Small doses cause an irritation of the respiratory centre, and consequently an increase in the number of respiratory movements. 15. Applied locally, sanguinarin soon causes complete paralysis of striped muscular fibre. 16. It always causes dilatation of the pupil. 17. It is an emetic. 18. It always lowers the temperature. 19. When introduced into the circulation, it diminishes muscular contractility.

THE INEFFICIENCY OF CARBOLIC ACID AS A DISINFECTANT DURING EPIDEMIC DISEASE.—The *New Orleans Medical and Surgical Journal*, November, 1875, reports the following as embodying the experience of the profession at New Orleans. 1. Carbolic acid, as used for the purposes of 'disinfection,' by the board of health in New Orleans during the years 1867-70-71-72-73-74 and 75, has failed to arrest small-pox, scarlet fever, and yellow fever. 2. Carbolic acid, as used for purposes of 'disinfection' by the board of health in New Orleans, has, in several instances, proved injurious to the in-

habitants of the 'disinfected' districts. 3. The facts observed in New Orleans during the practice of carbolic acid 'disinfection' upon a larger scale than ever before in the history of sanitary science, sustain the views held by the authorities that it is impossible to disinfect the atmosphere of an entire city, or even of a circumscribed area as of two or more squares. Cases of yellow fever have occurred in succession at long intervals in houses and localities which have been most thoroughly subjected to the so-called 'carbolic acid disinfection.' Instances have been observed where unacclimatised individuals returning from the country before cold weather had put an end to the disease, and entering those districts of the city in which carbolic acid had been most lavishly employed as a 'disinfectant' have been attacked with yellow fever. 4. Yellow fever has followed its usual course, increasing up to a certain period, and then declining with the fall of temperature, and ceasing with the appearance of the frost. No connection has been traced between the decline and cessation of the disease and the amount of carbolic acid used for purposes of disinfection.

DAREMBERG ON BEECH-TAR CREASOTE IN THE TREATMENT OF THE EXPECTORATION OF PHTHISIS. Dr. Georges Daremberg has first made a chemical analysis of the sputa of phthisical patients with great care ; he has shown that these sputa may contain almost as large a quantity of phosphates and chlorides as the urine, and that expectoration in these cases is one of the ways by which the products of denutrition are expelled ; this expectoration, however, is not only one of the ways, but also one of the causes of this denutrition, which is indicated by precise prognostic and therapeutic data. Beech-tar creasote has been employed in France by M. Bouchard, and in five cases of advanced phthisis the results have been favourable ; the expectoration has quickly stopped. From 20 to 40 centigrammes (about 3 to 6 grains) of creasote per diem were given. According to Hlasewetz and Barth this beech-tar creasote is a combination of creasote ($C_8H_{19}O_2$) with a carburetted hydrogen.

TALMY ON THE TREATMENT OF DIARRHŒA IN HOT COUNTRIES BY THE SUGAR OF MILK.—Dr. Talmy prescribes for the diarrhœa of hot countries from 20 to 300 grammes of sugar of milk daily. He administers it in the simplest way ; the sugar dissolved in a little water or as a syrup may be partly taken at each meal, or as a draught in the course of the day. An excellent mode of administration consists in putting the dose of sugar of milk to be taken into half a litre or two litres of milk, according to the habits and the digestive capacities of the patient. The treatment is spread over several months, diminishing the dose as nutrition becomes more considerable and easier. According to M. Talmy's little work (published by Coccoz, Paris) the endemic diarrhœa of hot climates is the result of a functional lesion of the liver, which results in the diminution and even the suppression of the glycogenic function of the liver. The sugar of milk may thus replace the glucose which is wanting in the blood.

CHALLE ON THE MARINE TREATMENT OF SCROFULA AND RICKETS.—Dr. Ernest Challe has specially noted, in the Hospital of Berck, the good effects obtained by treating scrofula by sea-water

and sea baths. The following figures, extracted from his 'Thèse de Paris,' show the results obtained in the year 1875.

	Boys.	Girls.	Total.
Cases in hospital on Jan. 1, 1875	258	253	511
Came into hospital in 1875	177	179	356
Total	435	432	867
Went out in 1875	193	213	406
Deaths	17	3	20
Total	210	216	426
Remaining on Dec. 31, 1875	225	216	441
Went out cured or much better	—	—	318
Not cured or removed.	—	—	88
Deaths	—	—	20

RECENT PAPERS.

Treatment of Neuralgia by Salicylic Acid. By Dr. C. Meyer. (*Ärztliches Intelligenz-Blatt*, Oct. 24.)

A Comparison of the Various Methods of Treatment in Pertussis. By Dr. P. B. Porter. (*New York Medical Journal*, Oct.)

PSYCHOLOGY.

LAHR ON COLD WATER PACKING AND PROLONGED BATHS IN MANIACAL CONDITIONS.—In a paper read before the Psychiatrischer Verein at Berlin, and reported in the *Zeitschr. für Psychiatrie* (vol. xxxiii. part 3), Dr. Laehr says he considers this treatment particularly suited to the most troublesome class of cases which are met with in asylums, persons with whom almost literally one can do nothing; they refuse to be fed, to be washed, to be dressed, etc., they destroy everything, cover themselves and whatever is around them with filth, and are hopelessly stubborn and intractable. These are the patients who used to be subjected to prolonged mechanical restraint, but who are now for the most part treated to strong dresses fastened by leather straps and locks, and often dosed in vain with chloral and morphia. Dr. Laehr says that these patients are sometimes left naked in single rooms with merely some straw or rushes until their excitement has passed off, but we do not think that such treatment is practised in England at the present day. The author claims to have frequently seen the most surprising effects caused by prolonged baths and cold packs upon patients of this class, and he relates in full one such case.

Miss F., aged twenty-five, had been somewhat depressed, owing to family troubles, for about two years; she then became thoroughly melancholy, and was removed to an asylum whilst suffering from delusions of persecution, poisoning, etc., and refusing her food. She remained much in this state for eight months, but, just as she seemed to be improving, her mental condition became changed to one of violent excitement; she raved for hours together, ran excitedly about, had a ravenous appetite, was dirty in her habits, and practised self-abuse. The maniacal symptoms continued to increase, the patient shouted day and night, ran wildly about overthrowing the furniture, drummed with her feet against the wall, called herself by various titles, and refused all her food; she stripped herself, destroyed her clothing, and would not be dressed again; she pulled her hair out and was filthy in her habits. This state of things

had gone on for eight days, and the patient was greatly exhausted and reduced, with her temperature somewhat below normal, having slept only very few hours during the whole week, when the prolonged baths were commenced; they were given in the morning, and lasted from four to six hours; the patient appeared very comfortable, ate her food, and even fell asleep in the bath; in the afternoon the cold packs were applied, the patient soon fell asleep, and remained in them three or four hours. From this time improvement steadily progressed, but for a considerable period the same treatment had to be continued, for, when either the bath or the pack was omitted, bad symptoms always presented themselves again. Several months after the treatment ceased, the patient is reported as quite recovered.

HEMKES ON INSANITY FOLLOWING TYPHOID FEVER.—In a paper read before a psychological association in Hanover, and reported in the number of the *Zeitschrift für Psychiatrie* for September, Dr. Hemkes gives an account and an analysis of twenty-six cases of insanity following typhoid fever, which have been, during the last few years, under observation in the asylum at Hildesheim. Of these only seventeen are considered by the author to be undoubtedly due to the fever; in thirteen of them the mental symptoms were developed early during convalescence, and in the other four they appeared between three and twelve months afterwards, but the patients had never recovered from the weakness, emaciation etc., which the disease had caused.

The psychoses produced by enteric fever present no special characteristics which distinguish them from mental affections brought about by other causes, but Dr. Hemkes has been unable to find any recorded instance of general paralysis following this disease. Of the above seventeen cases, eight are reported as melancholia, eight as mania, and one as primary dementia. Among the seventeen there were six recoveries, three remain under treatment, the prognosis being uncertain, and one was discharged much improved and may have since recovered.

Short notes are given of the nine other cases, in which insanity followed *typhus abdominalis* after a period of from two to twelve or more years; as many writers hold that if there has been an attack of this disease in years gone by, it should generally still be regarded as a cause of insanity. Schlager and Jacobi, holding this view, have described the most frequent form of mental disorder under these circumstances as delusional insanity with delusions of persecution and hallucinations, and it is noteworthy that three of Hemkes' nine cases, in which the mental symptoms were not developed until after a considerable interval, took on this character. Among these nine cases there were only two recoveries.

As to the frequency of insanity caused by typhoid, Hemkes finds at Hildesheim only seventeen cases out of 1,500 to have been so caused; i.e., rather over 1 per cent., or, counting the other nine cases, about $1\frac{1}{4}$ per cent. Nasse has stated the proportion at 2 per cent. among a total of 2,000 patients; other observers have found rather larger numbers, but Bergman at Hildesheim stated the percentage as 38.

Psychoses following enteric fever, as well as the delirium occurring during its course, are regarded by the author as certainly due to anatomical changes in the brain and its membranes. Different investigators are not at present unanimous as to what these

changes are ; one party maintains that the symptoms are due to persisting hyperæmia of the brain with its results, while Griesinger and others point to anæmia and exhaustion as the cause. Buhl has described an oedematous condition of the brain and membranes with hyperæmia, and he believes that atrophy of the brain is also present. Hoffmann also found oedema, and has described in addition a diffuse yellow and brown spotted colouration of the cerebral substance, caused by pigment granules in the ganglion-cells. In some cases these granules were seen even in the nuclei of the cells, and had apparently caused their disintegration. This leads Hoffmann to describe the process as parenchymatous degeneration. These and other observers have also found considerable quantities of fat and pigment granules collected in the walls of the smaller cerebral vessels. The latest researches on this subject seem to be those of Dr. Leo Popoff (*Virchow's Archiv*, Bd. lxi.). He examined twelve cases which died from the second to the fourth week of typhoid fever ; the only appearances presented to the naked eye were a slight fulness of the vessels and occasional oedema ; but microscopical examination of the cortical substance revealed an infiltration of the brain-substance with small cellular elements resembling lymph-corpuscles ; these not only surrounded the ganglion-cells, but had often penetrated into them, in some cases so far as to exercise evident pressure on the nucleus. Popoff considers, then, that a number of the so-called migratory corpuscles enter the ganglion-cells, causing, in many cases, division of their nuclei, division of their protoplasm, and often destruction of the cell itself. A number of similar corpuscles were also found in the perivascular lymphatic spaces, and in the spaces surrounding the nerve-fibres. Like other observers, he noticed a deposit of fat and pigment granules in the walls of the vessels, and, beyond this, was often able to make out, in the smallest vessels, products of proliferation. The cells in the capillary walls were seen to be in a state of division, and were present in great numbers ; repeatedly in the lumen of the vessels the white blood-cells were extremely numerous, sometimes outnumbering the red cells, and in a few instances the vessel was filled with white cells only. All these appearances are considered to imply acute inflammatory mischief. This being so, says Hemkes, we can easily understand insanity following typhoid fever. He further says that probably cases in which only a small degree of anæmia or hyperæmia, with or without slight oedema of the brain and its membranes, exists, will recover under suitable treatment, but that where destruction of the ganglion-cells and considerable vascular changes have taken place, an incurable psychosis will probably be developed.

In a discussion which followed the reading of this paper, it was specially remarked that the delirium of typhoid fever, together with its surroundings, has not yet been sufficiently observed and described.

CHAS. S. W. COBOLD, M.D.

OBSTETRICS AND GYNÆCOLOGY.

ARLÈS ON INVERSION OF THE UTERUS TREATED BY THE ELASTIC LIGATURE.—At the meeting of the French Association for the Advancement of Science, August 23 (*Paris Médical*, September 7, 1876), Dr. Arlès read a paper on this subject. A woman

affected with inversion of the uterus had had seven pregnancies and three abortions. Dr. Arlès had in vain attempted reduction by the means usually employed. He resolved then to draw down the inverted uterus, and to surround it by a caoutchouc tube moderately closely. The results of the operation were very simple. The tumour was detached at the end of fifteen days. With this method of procedure, Dr. Arlès has never seen either hæmorrhage or peritonitis occur.

W. DOUGLAS HEMMING.

BOISSARIE ON INTRA-UTERINE FIBROIDS.—Dr. Boissarie gives (*Annales de Gynécologie*, Sept.) the history of a large intra-uterine fibroid in a woman aged forty-five years. At the vulvar orifice there was a large whitish mass, filling the pelvis ; it was impossible to reach the pedicle or the os uteri by the finger. As far as could be felt the tumour was free from adhesions. He tried to drag it outside the the vulva but failed, he therefore cut of all he could reach, with scissors ; having thus emptied the vagina he could feel the os and penetrate into the uterus, but not so far as the foot of the pedicle. The os had partly closed, and in a few days it entirely closed and the patient went away. In a few months she returned with the tumour again filling the vagina, and ulcerating where it came in contact with the air. He repeated the treatment with the result of the os completely closing, and now, after three years, the patient is perfectly cured. Dr. Boissarie is therefore contented with the result of partial removal of these large growths, as he believes that the time comes when their activity ceases, and they are absorbed ; and that this time coincides with the menopause.

COURTY ON REMOVAL OF INVERTED UTERUS BY THE ELASTIC LIGATURE.—Professor Courty relates (*Annales de Gynécologie*, September, 1876.) two cases of removal of the inverted uterus by the elastic ligature. In the first case, the uterus was removed by Dr. Courty after he had failed to reduce it. A caoutchouc tube was fastened round the neck of the uterus, and its ends fixed by a waxed thread very tightly drawn. This was tightened from time to time. At the end of thirteen days the tumour was completely detached. At the end of two months the patient was discharged, cured. The second case was done by Dr. Arlès, who applied the ligature in the same manner, and the uterus separated on the twelfth day, without any complication, leaving the operator astounded at the simplicity, harmlessness, and efficaciousness of the operation. In order to mark out more clearly the line of section, Dr. Courty proposes to burn a furrow round the uterine neck with the galvanocautery, in which the ligature will be more readily embedded.

FANCOURT BARNES, M.B.

GOELET ON A CASE OF ABSENCE OR NON-DEVELOPMENT OF BOTH UTERUS AND OVARIES.—The following rare case is related by Dr. A. H. Goelet in the *New York Medical Journal* for October.

Miss B., aged nineteen, consulted Dr. Goelet on February 12, 1876. She had never menstruated, and complained of constant severe headache, and of bleeding from the nose. The headache she had had as long as she could remember ; the epistaxis occasionally for the last five or six years, but not with any regularity. Otherwise her health was very good. Within the past three or four years she had consulted several physicians, who made unsuccessful

efforts to bring on her 'periods.' Her mother had also tried the usual domestic remedies, but likewise without success.

Her history led Dr. Goelet to suspect some congenital malformation, and he therefore advised an examination, to which she reluctantly consented. The points revealed were these.

1. The pudendum was entirely devoid of hair.
2. The vagina was a mere *cul-de-sac*, not more than two inches in length, and there was no evidence of a uterus at its extremity.
3. There was no uterus found after a thorough exploration of the pelvis. By conjoined manipulation—the index-finger of the one hand in the rectum and the other hand on the hypogastrium—the excavation of the pelvis could be explored with ease, the patient being very thin; and not even a rudimentary organ could be detected.
4. The mammae were wholly undeveloped.
5. She has never experienced any sexual sensations.

Dr. Goelet remarks that, judging from her history, and what was revealed by the examination, there was not only absence of the uterus, but also absence of the ovaries, or they were undeveloped.

He ordered bromide of potassium and hydrate of chloral for the headache, and this, he afterwards ascertained, afforded some little relief.

Such cases are extremely rare. A somewhat similar case was reported to the Royal Academy of Medicine in 1826, by Dr. Renaudin, at the age of fifty-two. She had never menstruated nor experienced any venereal passions, and the breasts were undeveloped. At the necropsy only a cervix uteri of the size of a writing-quill was found, but there was no uterus proper, and the ovaries showed very little development.

KIMBALL ON EXTIRPATION OF THE UTERUS IN CONNECTION WITH OVARIOTOMY: RECOVERY.—Dr. Gilman Kimball records (*Boston Medical and Surgical Journal*, August 31) the case of a patient, forty-eight years old, who had been operated on eleven years before for a cystiform ovarian tumour, which after removal weighed thirty-three pounds. She made a good recovery, and continued in good health for six years, about which time she noticed her abdomen was enlarging. In June, 1875, she was tapped, and forty-five pounds of brown coffee-coloured fluid drawn off, followed by extreme prostration. She was again tapped in October, and as these tapings only afforded temporary relief, and her health failing, she applied on November 5 to Dr. Kimball to again operate. An opening through the parietes, in the line of the former incision, was followed by an escape of several ounces of ascitic fluid. A cyst was tapped by a large trocar, and twenty-seven pounds of chocolate-coloured fluid were drawn away through a cannula, to which an India-rubber tube had been attached. The opening was enlarged and the cyst emptied. A semi-solid mass, composed chiefly of a large number of smaller cysts, was slowly drawn through the incision, care being taken all the while to keep the opening closed, as far as possible, against the ingress of atmospheric air.

The disease had embraced not only the uterus, but the whole of the left broad ligament. A separation of the parts thus involved was found impossible. Consequently, the extirpation of the entire uterus became an unavoidable necessity. A cluster of distended veins connected with the broad ligament was secured and severed between two ligatures.

The remaining tissues to be divided being thus considerably diminished in bulk, and especially in width, were next embraced in a loop of stout annealed iron wire, drawn tight by means of an *écraseur*. The operation was completed by severing the connection between the uterus and vagina by two or three strokes of the knife. The point of division was about three-fourths of an inch outside the iron ligature.

Before closing the wound it was found necessary to remove a considerable quantity of coagulated blood from the pelvic cavity. With some difficulty and delay a bleeding vessel was finally discovered, and secured with a carbolised ligature.

The pedicle, being short, was drawn forward and secured between the lips of the incision. The surface of the stump was thoroughly seared by actual cautery, and the wound closed with four deep sutures, three above and one below the pedicle.

During the entire period of convalescence there were no unpleasant symptoms. From first to last there were no signs of peritonitis or septicæmia.

MCBRIDE ON A CASE OF PUDENDAL HÆMATOCELE.—Dr. E. H. McBride reports the following case in the *Richmond and Louisville Medical Journal* for May. In April, 1875, he was called to see Mrs. L., mother of four children, and aged about thirty-five years. She had an enterocele in the right labium. It was very easy to reduce, but not easy to keep in place afterwards. The woman was in the third month of pregnancy. Dr. McBride used Gariel's air-pressary, but it could not be worn without great discomfort; he therefore abandoned all treatment except a band carried loosely around the body, to which was attached another band in front that passed over a compress on the tumour, and on through the perineal region to be fastened again on the back. It grew no worse; and when labour came on, it was only necessary to reduce it, which was done, and all went well. She was delivered of a fine daughter, and six months afterwards she felt quite well, the tumour having nearly disappeared.

Six months after her confinement, Dr. McBride was again called to see her hurriedly. She had been standing, the child in her arms, before the fire, and sat down with some force on a low chair in which was a large gourd with a neck three inches long. The sharp-pointed neck, being upwards, forced its way, in spite of her thick clothing, into the right labium at the posterior commissure, but the dress was not torn. The abrasion was very small. The neck of the gourd seemed to have passed along the mucous face of the right labium, leaving a black line, which was very hard. Five hours after the accident Dr. McBride found her with rigors, vaginal tenesmus, pulse denoting some prostration, caused by the excruciating, bearing-down pains she had felt for five hours, and some nausea and vomiting. On examination, he found a tumour larger than a goose's egg in the precise situation of the former enterocele; but unlike the soft reducible enterocele there was a hard, black clot, which seemed not to communicate with the abdomen, as there was no appreciable impulse produced by coughing. The tumour was so tender and sensitive that a thorough examination was impossible. There was no pulsation in the tumour. His diagnosis was pudendal hæmatocele; and with the aid of Dr. John McRae, an operation for the removal of the clot was done forty-eight hours after the accident, without chloroform. The

incision was made as directed by Dr. T. Gaillard Thomas. A large amount of coagulum and some pus were turned out of the sac. Nothing could be found of the enterocele. She rapidly recovered with but little sloughing. The after-treatment consisted in the use of injections daily of a weak solution of carbolic acid into the sac.

In his work on 'Diseases of Women,' Dr. T. Gaillard Thomas says: 'The accident in the puerperal woman is not very rare, but my experience would lead me to regard it as extremely so in the non-puerperal, since in a practice of nineteen years I have met with but one case. I have examined carefully the current medical literature of the day, and although it teems with reports of this affection as a complication on sequel of labour, I find no reports of instances in the non-pregnant woman.'

AYER ON A CASE OF IDIOPATHIC PERITONITIS COMPLICATING LABOUR.—Dr. James B. Ayer reports a case of this rare condition in the *Boston Medical and Surgical Journal* for May 25, 1876. On January 25, 1876, he was called to attend Mrs. C. D. B., aged thirty-seven, in labour with her first child. A year previously she had had a miscarriage. For two years she had been weak, and during the five or six months preceding confinement she found that the slightest exertion fatigued her, and she was compelled to give up her daily walk for exercise. For the last two months she complained of being very feverish. At times her breathing was very rapid. She had been jaundiced at frequent intervals since 1860, and had been told by physicians that her liver was much enlarged.

The labour was easy; the child weighing nine and half pounds, was delivered in ten hours after the first pains. The placenta followed quickly, and the uterus contracted readily and firmly. The perinæum was ruptured slightly. During the labour the patient frequently breathed rapidly and with difficulty. She complained of feeling very warm, and demanded that the doors should be open and the room kept cool. The temperature, a few minutes after delivery, was 100°; pulse, 88. There were no after-pains, and she slept quietly. Five hours after delivery Dr. Ayer found her jaundiced and the abdomen tympanitic. When pressure was made at either side of the uterus she experienced a slight amount of pain. She had had no chills nor vomiting. Pulse 90; temperature 100½°; respiration 35. There were five yellow stools during the day.

On the 27th she had slept well, and was now comfortable. Pulse 90; temperature 101°; respiration 30. The heart and lungs were found healthy. The abdomen was as tense as a drum. An enema containing turpentine brought away a large amount of wind. There was slight pain at the sides of the uterus on hard pressure. The diarrhoea had ceased.

On January 28, the patient was cheerful, and said that she had a good appetite. The breasts were filling with milk, and the child when put to them, nursed well and seemed satisfied. There was no pain over any part of the abdomen, even when considerable pressure was made.

On January 29, the temperature rose suddenly last night to 104°, and remained nearly as high. The patient, however, was comfortable; the skin was not very hot; tongue moist. The lochia were scanty. The perineal wound appeared to be healthy. During the next two days the temperature remained high; the patient, however, had no pain. Towards mid-

night on the 31st, she became unconscious, and died a few minutes later, on the sixth day after delivery.

The necropsy showed that the whole peritoneum was inflamed, and, in numerous places, lined with a purulent secretion. The abdominal cavity contained a pint of sero-purulent fluid. The uterus was well contracted, and both its inner lining and its substance were found in the condition which would be expected on the sixth day after delivery. The Fallopian tubes, ovaries, and broad ligaments showed nothing characteristic of disease. The liver was much enlarged, weighing about five pounds; it was otherwise normal. The heart was healthy. The lower lobe of the left lung was cedematous; the lungs were otherwise healthy. Each pleural sac contained six or seven ounces of serum. The other organs were healthy.

The healthy appearance of the uterus and of its attachments proves that this case could not have been one of ordinary puerperal peritonitis. On the other hand, the feverish symptoms and rapid respiration (in which the abdominal muscles took no part) noticed several weeks before confinement in connection with a temperature of 100° at the close of an easy labour, and with the absence of rigors, point to a peritonitis of latent character developed previously to confinement.

Dr. Ayer remarks that according to Hervieux and Fordyce Barker, cases of uncomplicated peritonitis, where no other pathological modification is found, are extremely rare. This case is peculiar on account of the absence of many of the diagnostic symptoms of peritonitis. We should have expected rigors and vomiting, arrest or suppression of the mammary secretion, together with a flabby condition of the mammae and a soft, uncontracted condition of the uterus. The pale face, sunken eyes, and collapsed cheeks of peritonitis were not present in this case.

In regard to the absence of pain, Schröder mentions cases where the inflammation had involved the whole peritoneum, as proved by necropsy, where only slight abdominal pain was noticed, and that limited to each side of the uterus. Churchill mentions five cases of intense general peritonitis where there was no pain nor tenderness whatever.

RECENT PAPERS.

- On the Hypertrophic Elongation of the Vaginal Portion of the Neck of the Uterus. By L. E. Dupuy. (*Le Progrès Médical*, nos. 42, 43, and 46 of 1875 and 41 of 1876.)
- Bleeding and Chloral in Eclampsia. By Dr. Brochin. (*Gazette des Hôpitaux*, Oct. 7.)
- Tubal Pregnancy; Death from Rupture of the Membranes and Hæmorrhages. By Dr. Wolffhardt. (*Ärztliches Intelligenz-Blatt*, Oct. 24.)
- Gastrostomy in a Case of Retroversion of the Uterus. By Dr. Kœberle. (*Allgemeine Wiener Medizinische Zeitung*, Sept. 19.)
- Complete Extirpation of a Cancerous Uterus. By Dr. C. Heming. (*Ibid.*, Sept. 26.)
- Acute Bronchocele with Cardiac Hypertrophy occurring during Pregnancy, and producing Fatal Dyspnoea. By Dr. John B. Roberts. (*American Journal of Medical Sciences*, Oct. 1876.)
- Case of Rupture of the Uterus; remarkable for its comparative Causelessness, so far as known, and the Absence of the usual Antecedents. By Dr. Isaac C. Porter. (*Ibid.*)
- A Case of Splenic Leucocythæmia, exhibiting marked temporary improvement. By Dr. F. C. Curtis. (*Ibid.*)
- On Natural and Artificial Rotation of Presentations of the Face with the Chin Backwards. By M. A. Fochier. (*Lyon Médical*, Oct. 15, 1876.)
- On Uterine Thermometry as a means of Diagnosing Pregnancy, as well as the Life of the Fœtus, according to the

Researches of Cohnstein, Fehling, Schlesinger and Alexieff. By Dr. P. Marduel. (*Ibid.* Oct. 29.)

Large Cyst of the Left Ligament; Operation; Death. By Dr. Arning. (*Allgemeine Wiener Medizin. Zeitung*, Oct. 31.)

REPORTS OF PROCEEDINGS OF THE INTERNATIONAL MEDICAL CONGRESS IN PHILADELPHIA.

The following are summaries, taken from the *Medical News and Library*, of the principal papers read in the several sections of the International Medical Congress.

September 4.—SECTION I.—MEDICINE.

Typho-Malarial Fever: Is it a Special Type of Fever?—Surgeon J. J. Woodward, United States Army, made some preliminary remarks on the mortality of armies from disease, with comments on the comparison recently drawn by Professor Virchow between the mortality of the United States armies during the late civil war and that of the German armies during the war with France. He referred to the fatality of camp-fevers during the American civil war, and to the general belief among medical officers early in the war that these fevers represented a 'new type of disease.' The history of the introduction of the term typho-malarial fever was then given, and the proposition submitted that whenever great armies campaign in malarial regions the prevalent fevers are hybrids, between the malarial fevers and some form of typhus. Historical illustrations were drawn from (a) the siege of Naples, 1528; (b) the Hungarian campaigns, from 1526 to 1788; (c) the morbus mucosus of Roederer and Wagler; (d) the Walcheren expedition of 1809; (e) Virchow's comments on the fevers of the German army in France. Dr. Woodward then remarked on the distribution of malarial fevers and of typhoid fever in the United States, and on their relation to season of year; on the substitution of malarial fevers in particular regions, or at particular times, by typhoid; on the early recognition of hybrid forms by Drake; and on the recognition of similar hybrids by European authors as well as by Americans. The author then referred to the typho-malarial fever of the civil war. This term, he said, was never meant to represent a specific type of fever, but intended to designate all the many-faced brood of hybrid forms resulting from the combined influence of the causes of malarial fevers and of enteric fever. He then sketched the symptoms and pathological anatomy, and referred to the two great groups of cases—those in which the malarial element predominates, and those in which the typhoid element predominates; and to the scorbutic taint as a complication of either group during the civil war. After discussion, the section adopted as its opinion the following conclusion. Typho-malarial fever is not a special or distinct type of disease, but the term may be conveniently supplied to the compound forms of fever which result from the combined influence of the causes of the malarial fevers and of typhoid fever.

SECTION II.—BIOLOGY.

Microscopy of the Blood.—Dr. C. Johnston, Professor of Surgery in the University of Maryland, referred to the original source of blood in vertebrates; elements of blood in vertebrates; the normal elements having form exclusively considered, as regarded from two points of view—(a) that of anatomy

and physiology, and (b) that of medical jurisprudence; genesis of corpuscles; form of coloured corpuscles and their structure; leucocytes; size of coloured corpuscles; their enumeration; the coloured blood-corpuscles in medical jurisprudence. The paper was descriptive, and no conclusions were presented.

SECTION III.—SURGERY.

Antiseptic Surgery.—Dr. John T. Hodgen, Professor of Surgery in St. Louis Medical College, opened a discussion on antiseptic surgery, and laid down the following propositions. 1. Putrefaction may and does occur in the solids and liquids of the body, both with and without the direct contact of germs borne in the air or water. 2. Putrefaction of the solids and liquids of an open wound may in many cases be prevented if the contact of living germs with the surface is not permitted, or by destroying their vitality after contact with it. 3. It is possible that the living solids and liquids of the body may be so altered that they shall not furnish the conditions necessary to putrefaction. 4. Practically, the conditions to be met in preventing putrefaction are so difficult that in many cases it is impossible to comply with them. Yet, even partial success is eminently worthy of our best efforts. The debate was prolonged and was adjourned to the next day.

SECTION IV.—DERMATOLOGY AND SYPHILOLOGY

Variations in Type and in Prevalence of Diseases of the Skin in different Countries of Equal Civilization.—The subject was introduced by Dr. James C. White, Professor of Dermatology in Harvard University. The section adopted the following conclusions. 1. Certain obscure affections, the etiology of which is little if at all understood, even in those parts of Europe to which they are mostly confined, may be regarded as practically non-existent in America—of such are prurigo, pellagra, and lichen exudativus rubra. 2. Certain diseases, directly connected with and dependent upon poverty and habits of personal uncleanness, are less prevalent in the United States than in those parts of Europe of which we have sufficient statistical information for comparison. Examples of this class are the animal parasitic affections especially. 3. Some cutaneous affections of grave character, which are dependent upon, or a part of serious constitutional disorders, are of less frequent occurrence and of milder type amongst us than in Europe in general, or those parts of it where they are endemic. Lupus, the syphilodermata, and leprosy are the most marked instances of this class. 4. Certain disorders of the skin, especially those of its glandular systems, and those connected more immediately with its nervous system, are apparently more prevalent with us than in Europe. The most notable examples of the former are seborrhoea, acne, and possibly the heat-rashes; of the latter, herpes, urticaria, and pruritis. In addition to the above-mentioned conclusions, the following additional proposition was adopted by the section. 5. The type of certain acute congestion and nervous diseases of the skin is more severe in this country than abroad.

SECTION V.—OBSTETRICS.

The Causes and the Treatment of Non-Puerperal Hemorrhages of the Womb.—Dr. William H. Byford, Professor of Obstetrics in Chicago Medical College, approached a sequential classification by showing—

(a) That the uterus is prone to hæmorrhage, because of the conditions connected with menstruation; (b) That the causes of metrorrhagia act by aggravating these conditions; (c) That these causes sometimes have their origin in the nervous system, and sometimes in the vascular; (d) That of the latter causes some operate by increasing the flow of blood through the uterine vessels, while others effect the same results by retarding the current of blood in them. The mode of treatment advocated consists—(a) In removing the causes, and (b) in surgical, mechanical, and medicinal means to check the flow in great emergencies.

SECTION VI.—OPHTHALMOLOGY.

The Comparative Value of Caustics and of Astringents in the Treatment of Diseases of the Conjunctiva, and the best mode of applying them.—Dr. Henry W. Williams, Professor of Ophthalmology in Harvard University, spoke of affections of the conjunctiva in which neither caustics nor astringents are indicated; of the various forms of conjunctivitis, and the extent in which caustics or astringents may be usefully applied; of the modes of applying these remedies to best advantage; and of complications—in which the conjunctivitis is the result of other morbid processes—or in which the existing morbid conditions are the consequence of previous conjunctivitis, with the treatment of such complications. The conclusions offered were, after slight amendment, adopted by the Section.—1. In a considerable number of essentially transient affections of the conjunctiva, and in pterygium or other growths, no active treatment by caustics or astringents is required. 2. When disease affects only a limited portion of the conjunctiva, as in phlyctenular inflammation, the mildest stimulating or astringent remedies are usually sufficient. 3. In the acute and chronic forms of general conjunctivitis, astringents are, as a rule, safer, as well as more efficacious, than caustics, and therefore better adapted to the requirements of the general practitioner.

SECTION VII.—OTOLOGY.

The Importance of Treatment of Aural Diseases in their Early Stages, especially when arising from the Exanthemata.—Dr. Albert H. Buck, of New York, introduced the subject. His remarks were based exclusively on affections of the middle ear associated with the formation of pus, the serious nature of this form of disease oftentimes impairing the hearing very markedly, and occasionally terminating in death. He remarked that the anatomical relations of the middle ear afford an explanation of the serious results that may follow an acute inflammation of these parts; on the impotent nature of the means commonly employed for the relief of such an inflammation. He commented on the great value of paracentesis of the membrana tympani as a preventive of chronic purulent inflammation of the middle ear and all its serious consequences. The general practitioner was urged to acquaint himself with the use of the speculum and mirror. The Section adopted the following conclusions. 1. Chronic otorrhoea is at the present time a very common disease, due in most cases to the want of proper treatment during the acute stage of the affection. 2. It is by no means a harmless affection. 3. It may be fairly classed as a preventable disease; at least among those who possess a healthy constitution. 4. Paracentesis of the membrana tympani, if resorted to

during the first few days of the acute attack, and if not carried out too timidly, *i.e.*, if a free incision be made, and not a mere prick, is almost a sure preventive of the subsequent chronic disease. 5. The profession at large, and especially the medical schools, should give the subject more earnest thought than they have in the past.

SECTION VIII.—SANITARY SCIENCE.

Present Condition of the Evidence concerning Disease-Germs.—Dr. T. E. Satterthwaite, of New York, first considered the (1) vegetable germ-theory in contradistinction from other prominent theories, especially (2) the bioplasm theory, and (3) the physico-chemical theory. Especial attention was directed towards the following general topics:—(a) The agency of minute organised particles of a vegetable nature in the production of fermentation and putrefaction; (b) the epidemic diseases of certain plants and animals in their relation to minute vegetable organisms; (c) rapid multiplication of bacteria *pari passu* with the rapid spread of disease manifestations throughout the system; (d) the constant ratio between the most active changes in the so-called septic diseases, such as pyæmia, erysipelas, and puerperal fever, with the numerical increase in bacteria at the points involved; (e) can any strictly chemical substance be a fever producer? (f) bacteria and disease poisons: their capacity for successfully maintaining active properties; (g) inoculation of bacteria in healthy tissues. The following special topics were considered.—1. Bacteria: (a) their classification; (b) diagnosis; (c) appearances under varying conditions. 2. The poisonous fluids of infective diseases, as regards their physical properties and the solid particles contained in them. 3. The value of vacuum-tube experiments. 4. How far are either the bioplasm or the physico-chemical theories competent to explain the spread of infective diseases? 5. The poisons of special diseases, such as cholera, small-pox, the carbuncular diseases of men and animals, typhus and relapsing fevers, and diphtheria, in their relations to minute organisms. 6. The author's conclusions, after slight modification, were adopted as the opinion of the Section. 1. So far as inquiry has been made as to the results of the active principles in infective diseases, it is probable that in a certain number the matter is particulate or molecular in form, and, in the instances named, in no sense a soluble substance. 2. In regard to the causes of septicæmia, pyæmia, puerperal fever, erysipelas, and hospital gangrene, and in cholera, small-pox, the carbuncular diseases of men and animals, of typhoid and relapsing fevers, and diphtheria, there is not satisfactory proof that they are necessarily connected with minute vegetable organisms. 3. The real nature of these causes is still uncertain.

SECTION IX.—MENTAL DISEASES.

Microscopical Study of the Brain.—Dr. Walter Kempster, Physician and Superintendent of the Northern Hospital for Insane, Oshkosh, Wisconsin, gave a brief statement, outlining the progress made by recent investigators in studying the pathological histology of the brain in insanity, and the following subjects were introduced:—(a) The importance of microscopic observations of the several cerebral membranes, to determine their pathological condition, and the relations that the various pathological states hold to the forms of mental aberration; (b) The abnormalities in arterioles and capillaries, in-

cluding the various deposits on the walls of the vessels; engorgement and its consequences; the several changes observed in the coats of the vessels; occlusion from minute thrombi; and embolism; alterations in the course of the vessels, and the effect these conditions have upon the surrounding brain-tissue. (c) Miliary aneurisms and miliary hemorrhages; the effect they have in the production of brain disease. (d) The perivascular sheath, and perivascular canal, as they are found in cases of insanity, considered in their relations to adjacent brain-tissue. (e) The various alterations of structure and form noted in nerve-cells and nerve-fibres, in the several forms of insanity. (f) The abnormalities in the neuroglia, and the conditions called 'miliary sclerosis' and 'colloid degenerations' were described, and the influence each condition has in impairing normal cerebral action was discussed. (g) The various pathological conditions found in the microscopic examination of the brain in a number of cases of insanity were illustrated by means of photo-micrographs and lantern views.

September 5.—SECTION I.—MEDICINE.

Are Diphtheritic and Pseudo-membranous Croup Identical or Distinct Affections?—Dr. J. Lewis Smith, Physician to the New York Infants' Hospital, introduced the discussion on the question. The points made by the author were, that croup is a local malady, and that diphtheritic laryngitis is the expression or manifestation of a general malady. He referred to the anatomical characters of the affections, and adduced evidence to show that they are identical in kind as regards the state of the larynx, but differing in degree or intensity. He illustrated his remarks by clinical facts, which indicated their duality. The following conclusion was adopted by the Section. In view of the wide diversity of opinion at present existing as to the relations between diphtheria and croup, the Section on Medicine prefers to recommend the paper of Dr. J. Lewis Smith, to the Congress for publication, with the expression of their opinion of its high value as an important contribution to the literature of the subject, but without the expression of any definite conclusion upon the point at issue.

SECTION II.—BIOLOGY.

The Excretory Function of the Liver.—Dr. Austin Flint, Jr., Professor of Physiology in Bellevue Hospital Medical College, presented the following conclusions, which were adopted. 1. Cholesterin exists in health in the bile, blood, and nervous matter, also in the crystalline lens, the spleen, and meconium. 2. Cholesterin is formed for the most part in the nervous matter, from which it is passed into the blood. The blood gains cholesterin in its passage through the brain. Its formation is constant, and it is always found in the blood. 3. Cholesterin is separated from the blood by the liver, and discharged with the bile. It pre-exists in the blood, serves there no useful purpose, and, if allowed to accumulate, blood-poisoning results. 4. The bile has two separate and distinct functions, one connected with nutrition, to which the so-called biliary salts, glycocholate and taurocholate of soda, contribute; these do not exist preformed in the blood, but are products of secretion. The second function of the bile is excretory, connected with depuration or excretion; this is accomplished by the removal of the cholesterin which it obtains from the blood. 5. Normal fæces do not contain cholesterin. The latter substance is repre-

sented by stercorin, formerly called serolin, into which it is converted in its passage down the intestine. The conversion of cholesterin into stercorin does not, however, take place when digestion is arrested or when it is not necessary, as is shown by the presence of cholesterin in its own form in the fæces during fasting, and in the meconium. 6. The difference between the two varieties of jaundice, one mild and the other severe, is dependent on obstruction of the bile-ducts in one instance, with reabsorption of the biliary colouring matters, while in the other there is retention of cholesterin in the blood in consequence of destruction of the parenchyma of the liver. 7. That condition of the blood dependent upon the presence of cholesterin in the blood is called cholesteræmia. It is characterised by symptoms referable to the brain, and may or may not be attended with jaundice. 8. Cholesteræmia does not occur in every disorder of the liver, because, even when a part of the organ is disorganised, there may remain a part still capable of performing the functions of excreting cholesterin. 9. In cases of simple jaundice, even when fæces are decolourised, there is no accumulation of cholesterin in the blood. 10. Cholesterin bears the same relation to the liver as urea does to the kidneys.

SECTION III.—SURGERY.

Antiseptic Surgery.—The afternoon was devoted to the continuation of the discussion of the previous day on Antiseptic Surgery, the principal speaker being Mr. Joseph Lister, of Edinburgh. His remarks were illustrated by a partial demonstration of his antiseptic method. The section decided that it was unable, in the present state of the subject, to come to any distinct conclusion in regard to the antiseptic method.

SECTION IV.—DERMATOLOGY AND SYPHILOLOGY.

Are Eczema and Psoriasis Local Diseases, or are they Manifestations of Constitutional Disorders?—Dr. L. D. Bulkley offered the following conclusions, which were adopted. 1. Eczema and psoriasis are distinct diseases. The former is to be clearly distinguished from artificial dermatitis, and the latter from the eruptions of syphilis, scaly eczema, and leprosy. 2. Eczema and psoriasis cannot own a double causation or nature, at one time local and at another constitutional; but, with other diseases, may have a twofold cause, a predisposing and an exciting. 3. Eczema and psoriasis in many of their features resemble the accepted constitutional diseases more than they do those recognised as local. 4. Eczema is most properly likened to catarrh of the mucous membranes; it is very probable that some attacks called catarrh are eczema and psoriasis of the mucous tissue. 5. Both eczema and psoriasis resemble gout and rheumatism in certain respects, and are dependent upon a somewhat similar, although as yet unknown, constitutional cause; much of the skin-lesion must be looked upon as the local result or remains of the diseases. 6. There as yet exists no microscopical or physiological proof that eczema and psoriasis are the sole result of local cell-disorder, either congenital or acquired, or due alone to perverted nerve-action. 7. Local causes play a very important part in the etiology of eczema. They are probably inoperative in psoriasis. 8. Local treatment is often insufficient alone to remove the lesions of eczema and psoriasis, and cannot prevent or delay relapses; its success does not necessarily demonstrate the local nature of these affections. 9. Con-

stitutional treatment, alone and singly, can cure many cases of eczema and psoriasis, and prevent or delay relapses in a certain proportion of cases; under constitutional treatment is included every agency not properly classed among local measures. 10. The total weight of evidence and argument is that eczema and psoriasis are both manifestations of constitutional disorders and not local diseases of the skin.

SECTION V.—OBSTETRICS.

The Mechanism of Natural and Artificial Labour in Narrow Pelves.—The subject was introduced by Wm. Goodell, Clinical Professor of Diseases of Women in University of Pennsylvania. Regarding the mechanism alone of labour in narrow pelves, the following conclusions were reached. 1. The unaided first-coming head, and the aided after-coming head, observes in a flat pelvis precisely the same general laws of engagement and of descent. Hence, version here means art *plus* nature. 2. The forceps, however, applied in a flat pelvis antagonises more or less with the natural mechanism of labour. Hence the forceps here means art *versus* nature. 3. The aided and the unaided first-coming head observe in a uniformly narrow pelvis precisely the same laws of engagement and of descent. But version violates these laws. Hence, the forceps here means art *plus* nature; version, art *versus* nature. 4. That at, or above, the brim of a flat pelvis, the fronto-mastoid, or even the fronto-occipital, application of the forceps interferes less with the moulding of the head, and violates the natural mechanism of labour less than the biparietal pelvis. 5. In the flat pelvis, the vectis aids the natural mechanism of labour, and therefore meets the indications better than the forceps.

SECTION VII.—OTOLOGY.

What is the best Means of Testing the Hearing? Dr. Charles H. Burnett, Aural Surgeon to the Presbyterian Hospital in Philadelphia, considered (1) The character of the three principal tests (the watch, the tuning-fork, and speech) in use among aurists; the manner in which these tests are heard by the normal ear, and wherein the diseased ear fails to hear them. 2. Deficiencies and discrepancies in the hearing power of the diseased ear. In some cases the power to hear certain sounds in the musical scale drops out, while the power to hear others remains comparatively good. Can disease be diagnosed by the manner in which an ear hears certain tests? If so, what will give most aid in such a search? Most probably the voice. 3. Manner of Testing.—The following subjects were treated of:—(a) The importance of isolation of the better ear during the test in one-sided deafness. In any case, it is important to know how much is heard through the air, and how much is conveyed through the bones of the head. Want of precision in this has led to great errors in diagnosis and prognosis, in cases in which the nerve is good, but in which the sound-conducting apparatus, chiefly the middle ear, has been greatly diseased. (b) Consideration of what is needed for any form of test. An arbitrary sound unit may be established. An apparatus might be made to give out a set of notes of fixed value. It was considered how far the demands of any test are met by the watch, tuning-fork, and human voice. Conclusions favourable to the latter were drawn from the preceding remarks, with the recommendation of a series of test-words.

SECTION IX.—MENTAL DISEASES.

Responsibility of the Insane for Criminal Acts.—The following is a summary of remarks made by Dr. Isaac Ray, of Philadelphia, in opening the discussion. Great differences of opinion exist on the question how far insanity shall be admitted as an excuse for crime. Lord Hale's doctrine that partial insanity—that in which the patient is reasonable and correct on many subjects—does not necessarily exempt one from the penal consequences of crime, still shapes the decisions of English and American courts. Tests for determining what kind of partial insanity does and what does not excuse for crime are diverse, unsatisfactory, and none supported by correct scientific knowledge of insanity. Delusion has been decided to be a sufficient excuse only when the criminal act committed under its influence would have been legally justified had the delusion been true. Notwithstanding many of the insane think and act correctly to some extent, yet it is impossible to say with any near approach to certainty in any given case, where sanity ends and insanity begins. Two mistakes are made by lawyers in estimating the responsibility of the insane, viz., they define the scope of the influence of the mental disorder in an arbitrary manner, unsupported by the facts of psychological science, and they regard the affective faculties as without any part in the play of disease. The latter mistake pervades the theories of the law and the judgments of those who pretend to no law. The moral, like the intellectual, faculties are dependent for their exercise on the brain—the larger part of the brain probably being devoted to this purpose. Consequently, disease of the brain must necessarily affect the manifestations of these faculties. Whether the one or the other class, or both, is affected will depend on the part of the brain diseased. Sanity supposes the integrity of all the faculties, moral as well as intellectual. If this integrity be destroyed insanity is the result, wherever the lesion may be. Whatever faculties may be affected or not affected, apparently responsibility is presumably impaired. It is for the party alleging the contrary to prove it. Punishment of persons admitted to be insane for criminal acts has been advocated for the sake of the example. No good effect can be shown by a single case in point. Wrong as the present mode of procedure is, no change for the better seems very practicable, unless it may be that which takes the question of insanity entirely from the court and gives it to the jury as one exclusively of fact. The Section adopted, by unanimous vote, the following conclusions. 1. There is at present a manifest tendency to hold the insane responsible for criminal acts. 2. This tendency is unjust, unphilosophical, and contrary to the teachings of pathology, which clearly points out that insanity is but the expression of disease.

September 6.—SECTION I.—MEDICINE.

Do the Conditions of Modern Life favour specially the Development of Nervous Diseases?—Dr. Roberts Bartholow, Professor of Medicine in the Medical College of Ohio, quoted numerous references in the writings of the ancients to mental and nervous maladies, and spoke of the influence in ancient times of those conditions supposed to be most active in the present day in the production of nervous maladies, viz., social excitement, political revolutions, sexual excesses, indulgence in wine.

He mentioned the recognition of nervous maladies in the sixteenth century, and said that, if in modern times an increase in nervous maladies had occurred, the result must be exhibited to a limited extent in an increased sickness and mortality rate. With the improvement in the general well-being wrought by our modern civilisation, a manifest increase in longevity has occurred. With an improved hygiene, the sickness-rates and the mortality from epidemics have diminished. The supposed increase in the number of nervous diseases is more apparent than real. The art of printing has greatly increased the diffusion of knowledge amongst men, and hence every medical fact has not only a more prominent record, but is more generally known. In modern times, within this century especially, nervous diseases have been more accurately studied and better differentiated. The growth of a higher humanitarian sentiment has led to a more abundant provision for the insane.

SECTION III.—SURGERY.

The Medical and Surgical Treatment of Aneurism.—This subject was reported upon by Dr. William H. Van Buren, Professor of Surgery in Bellevue Hospital Medical College. The following conclusions were adopted. 1. Tufnell's treatment of aneurism by rest, position, and restricted diet, offers a valuable resource in thoracic and abdominal aneurisms. 2. It should always be tried in innominate, subclavian, subclavio-axillary, and iliac aneurisms, before resorting to measures attended by risk to life. 3. For aneurisms of the subclavian and iliac arteries, the Hunterian operation, with our present means of preventing secondary hæmorrhage, is not justifiable. 4. For reasons formally set forth by Holmes and Henry Lee, the 'old operation' cannot properly be substituted for the Hunterian operation in these cases, but should be held in reserve for special cases. 5. It is the most safe and surgical resource in gluteal aneurism, if the circulation can be commanded by the hand *in recto*. 6. The mode of cure by embolism, aimed at in the method of manipulation, is a not unfrequent explanation of what is called spontaneous cure of aneurism. 7. The value of Esmarch's bandage in the treatment of aneurism is probably not fully estimated. 8. In view of the promising features presented by the cases of Levis and Bryant, in which horse-hair was introduced into an aneurismal tumour, the repetition of this operation, or the substitution for horse-hair of Lister's prepared catgut or other animal substances, may be properly tried.

SECTION IV.—DERMATOLOGY AND SYPHILOLOGY.

The Virus of Venereal Sores; its Unity or Duality.—Dr. F. J. Bumstead, late Professor of Venereal Diseases at the College of Physicians and Surgeons, New York, stated the views held as to the origin of venereal sores, and presented the following conclusions, which were adopted with some modifications. 1. The virus of venereal sores is dual. 2. Venereal sores may be due to the inoculation of the syphilitic virus, and also to the inoculation of products of simple inflammation. 3. These two poisons may be inoculated simultaneously. 4 (additional). The present state of science has demonstrated that suppurating inflammatory lesions resembling chancroids may be produced on various portions of the body by inoculations with simple pus from various lesions.

SECTION V.—OBSTETRICS.

The Treatment of Fibroid Tumours of the Uterus. The subject was treated by Dr. Washington L. Atlee mainly from the standpoint of personal experience. Two principal divisions on the subject were stated:—1. Tumours usually accompanied with hæmorrhage, embracing (a) fibroids occupying the vaginal canal; (b) fibroids within the cavity of the uterus; (c) interstitial submucous fibroids; (d) interstitial fibroids proper; (e) recurrent fibroids. 2. Tumours usually not accompanied with hæmorrhage, including (a) interstitial subperitoneal fibroids; (b) sessile peritoneal fibroids; (c) pedunculated peritoneal fibroid; (d) interstitial cervical fibroid; (e) myomatous degeneration of the uterus; (f) fibrocysts of the uterus. The author considered the best mode of treatment both surgical and medicinal; the removal of tumours *per vias naturales*; and by abdominal section; the propriety of extirpating a fibroid uterus by either of these methods; and the several agents which are supposed to control the growth of fibroid tumours.

SECTION VII.—OTOLOGY.

In what Percentage of Cases do Artificial Drum-membranes prove of Practical Advantage?—Dr. H. N. Spencer, of St. Louis, after reviewing the history of the artificial drum-membrane, considered (a) the condition of the ear admitting of its use; (b) contraindicating conditions. He then took up (a) forms of artificial drum-membranes (under which head a preference was stated for Yearsley's cotton-wool); (b) the offices performed, functional and therapeutical. When the conditions are the most favourable, it was alleged that the cases are the fewest in number where the artificial drum-membrane will be worn, whether the reasons be objective or subjective. The Section then adopted the conclusions of the reporter, as follows. 1. Of the various forms of artificial drum-membrane in use, the cotton-pellet is preferable for its greater simplicity and its easier introduction, for the greater uniformity of its effect and the comparative safety in its employment. 2. It has an advantage over all other forms of artificial drum-membrane in that, additional to the functional gain which may be derived, there may be added its value as a means of treating the tympanum, and this therapeutical use of the artificial membrane has a great future in otology. 3. The continued use of the artificial drum-membrane as a means of improving the hearing is indicated in rare conditions which can only be determined by the aural surgeon.

SECTION VIII.—SANITARY SCIENCE.

The General Subject of Quarantine, with particular reference to Cholera and Yellow Fever.—The discussion was opened by J. M. Woodworth, M.D., Supervising Surgeon-General U.S. Marine Hospital Service. The following conclusions were adopted. 1. The supervision of ocean travel ought to be directed to securing good sanitary condition of vessels at all times, out of as well as in port. 2. A system of port sanitation should be adopted and administered for each country or place separately, modified in particular cases by taking into account the liability of the port to infection, the period of incubation of the disease, the length of time consumed in the voyage, and the measures enforced by the vessel *en route*. 3. In some countries the detention of passengers and crews of ships hailing from infected ports is warranted, but for such time only as

is necessary to complete the period of incubation of cholera or yellow fever, counting from the date of departure from an infected port or landing from an infected vessel, but in no instance should passengers or sailors be held for observation on board an infected vessel, and such vessel should not be detained beyond the period required for inspection and thorough disinfection and cleansing. 4. Recognising the fact that the modifications of infectious diseases may sometimes elude the most vigilant sanitary supervision of shipping, the importance of wisely directed internal sanitary measures can scarcely be overestimated. 5. So far as America is concerned, it is desirable that prompt and authoritative information should be had of the shipment of passengers or goods from cholera or yellow fever infected districts, thereby insuring the thorough disinfection of infected articles. 6. It is believed that the endemic forms of cholera and yellow fever are the fields which give the greatest promise of satisfactory results to well-directed and energetic sanitary measures, and to this end an international sentiment should be awakened, so strong as to compel the careless and offending people to employ rational means of prevention.

SECTION IX.—MENTAL DISEASES.

Simulation of Insanity by the Insane.—Dr. C. H. Hughes, of St. Louis, Missouri, read a paper on this subject, which he summed up in the following conclusion, which was adopted as the opinion of the section. It is not only not impossible for the insane to simulate insanity for a purpose in any but its gravest forms of profound general mental involvement, but they actually do simulate acts and forms of insanity for which there exists no pathological warrant that we can discover in the real disease affecting them.

September 7.—SECTION II.—BIOLOGY.

The Mechanism of Joints.—Dr. Harrison Allen, Professor of Comparative Anatomy in the University of Pennsylvania, read a paper on the mechanism of joints. 1. Starting with the idea that joints are of dynamic and static values, it was shown that in most movable joints the ball-and-socket arrangement predominates. When the ball is supported by the socket, as at the occipito-atloid articulation, rest is suggested. But when the ball is suspended from the socket, as at the temporo-maxillary articulation, motion is suggested. Dr. Allen illustrated the etiology of fracture and dislocation by reference to this method of study. 2. It was premised that articular surfaces are of three kinds—axial, actinic, and lateral. The axial or primary surfaces are those situated upon proximal and distal ends of a bone in the line of its longitudinal axis. The actinic or secondary (rarely seen) are those placed in a line which is deflected from the longitudinal axis. The lateral or tertiary are those situated upon the sides of the shaft or body of a bone and serve for articulation with corresponding surfaces of other bones—e.g., the outer femoral condyle is axial, since it is placed in the line of the longitudinal axis of the femur. The internal femoral condyle is actinic, since its line intersects the long axis of the femur, from which it may be said to be deflected. The lateral facets of the metatarsal or tarsal bones serve to illustrate the lateral kind. 3. Axial surfaces, it is believed, are static; actinic surfaces are dynamic; while lateral surfaces have subordinate degrees of

value—some of them being adventitious. The outer femoral condyle is active in extension—static; the inner femoral condyle is active in flexion—dynamic; but the lateral facets have no independent action. 4. Joints are fixed or locked at extremes of flexion and extension, and are most relaxed at the intervals between these extremes. An application of these premises was made to the etiology of dislocation. 5. When a facet is actively employed, it enters into a combination with which the entire limb is in harmony. Hence in the study of any one facet its relations to all others of its kind, as well as to the bones, muscles, and fasciæ of its limb, become essential. 6. A correct knowledge of the symptomatology and treatment of diseases of the joints is dependent upon a true conception of the complex nature of articular surfaces. The conclusions of the author were accepted by the section.

SECTION III.—SURGERY.

Treatment of Coxalgia.—Dr. Lewis A. Sayre, Professor of Orthopædic Surgery in Bellevue Hospital Medical College, described coxalgia, and divided the disease into three different stages, giving the symptoms in each stage. He then referred to the pathological changes in the joint in the three different stages of the disease, and to the etiology or causation of the disease. The following conclusions, after an animated discussion, were reported as the opinion of the section, with the statement that in conclusion No. 2 the section did not unanimously coincide. 1. Morbus coxarius is a disease most frequently met with in early childhood, or the age of reckless indifference. 2. It is almost always of traumatic origin, and not necessarily connected with a vitiated constitution. 3. Rest and freedom from pressure of the parts involved, while at the same time the rest of the body is allowed free exercise in the open air, and a nutritious diet, is the best treatment that has yet been devised for this disease. 4. If this plan of treatment be adopted in the early stages of this disease the majority of cases will recover, with nearly if not quite perfect motion, and without deformity. 5. In the advanced second stage of the disease, when absorption of the effused fluid cannot be produced, then it is better to puncture or aspirate the joint and remove its contents, than to leave it to rupture by ulceration. 6. In the third stage of the disease, when the treatment recommended has been properly applied without satisfactory improvement, but progressive caries continues, the excision of the diseased bone is not only justifiable, but in many cases absolutely necessary. 7. The operation of excision of hip is easily performed, and in itself attended with little or no danger. 8. After excision of the hip-joint in cases of progressive caries, the recovery is much more rapid and certain, and infinitely more perfect, as to form, motion, and the usefulness of the joint and limb, than when left to the slow process of nature.

The Causes and Geographical Distribution of Calculous Diseases.—Dr. Claudius H. Mastin, of Mobile, in treating this subject, gave a brief notice of the varieties and constituents of calculous concretions, tracing the formation and probable causes of gravel in the kidney, and afterwards of stone in the bladder. (a) Hereditary influences governing diathesis, with the effect of habit and mode of life upon the formation of these deposits. (b) Climate, food, water, and the default of exercise, as bearing upon healthy digestion and assimilation. (c) The influence

of age, sex, race, and occupation, and of moral and physical emotions; also the mechanical and traumatic causes of these affections. (d) The agency of the colloids in the formation of calculi. The author then gave a review of the manner of formation of gravel in the kidney, its passage through the ureter, and lodgment in the bladder; and an outline of the geographical sections in which calculous diseases are found to abound, with a summary of their probable causes.

SECTION IV.—DERMATOLOGY AND SYPHILOLOGY.

The Treatment of Syphilis.—Dr. E. L. Keyes, Adjunct Professor of Surgery and Professor of Dermatology in Bellevue Hospital Medical College, read a paper on the treatment of syphilis with special reference to the constitutional remedies appropriate to its various stages; the duration of their use, and the question of their continuous or intermittent employment. The following propositions, slightly modified from those originally presented, were adopted by the section. *Negative conclusions, views for which there would seem to be no foundation in fact.*—1. Syphilis commencing mildly needs but little treatment, and does not require mercury. 2. Mercury given internally is necessarily debilitating. 3. Mercury is only useful in secondary syphilis. 4. Iodide of potassium is of considerable value in secondary syphilis. 5. Iodide of potassium is of no value unless preceded by the use of mercury. 6. Iodide of potassium acts by liberating mercury which has been lying latent. *Positive conclusions, which, in the present state of our knowledge, may be affirmed.*—1. Mercury is an antidote to the syphilitic poison, and of service in controlling all its symptoms in all, even the latest stages of the disease; its power over gummata being least, and not to be relied upon. 2. Mercury in minute doses is a tonic. 3. Iodine cures certain symptoms of syphilis, but does not prevent relapses. 4. Mercury, long continued uninterruptedly, so far as practicable in small doses from the time of earliest eruption, constitutes the best treatment of syphilis.

SECTION V.—OBSTETRICS.

The Nature, Causes, and Prevention of Puerperal Fever.—Dr. W. T. Lusk, Professor of Obstetrics in Bellevue Hospital Medical College, after stating that puerperal fever is a generic term, defined its varieties and the distinction between non-infectious and infectious forms. The non-infectious form was described as the result of (a) Traumatic injuries; (b) Old peritoneal adhesions; (c) Disregard of hygienic precautions; (d) Mental influences. The infectious form, he stated, was a septic disease, and the local lesions were the usual though not necessary points through which the poison enters the system. He referred to the relations of bacteria to puerperal fever; the influence of erysipelas, scarlatina, diphtheria, etc., upon the puerperal state, and to atmospheric influences. As regards the causes, deductions were drawn from civil statistics, hospital statistics, and private practice, and in the prevention of the disease we must be guided by our knowledge of its causes.

SECTION VI.—OPHTHALMOLOGY.

Progressive Myopia and Posterior Staphyloma.—Dr. E. G. Loring read a paper on the question, Are Progressive Myopia and Posterior Staphyloma due to Hereditary Predisposition, or can they be induced by Defects of Refraction, acting through the In-

fluence of the Ciliary Muscle? The following were the conclusions. 1. From the fact that so large a percentage of children are myopic, whose parents are not near-sighted, while the myopia increases directly with the amount of increased tension of the eyes, and from the fact that an interchange of refraction may occur, whereby an eye which is not congenitally myopic may become so in spite of hereditary tendency against it, it would seem to follow that hereditary predisposition, though undoubtedly a potent cause, is not only not the sole cause, but it is not even the predominating cause. 2. The action of the ciliary muscle, taken by itself, exerts but little influence on the production of myopia, and still less on the formation of the cone. Of these conclusions, the first was adopted by the Section unanimously, and the second by a majority of fifteen to seven.

SECTION VII.—OTOLOGY.

The Hearing of School Children.—Dr. C. J. Blake, Instructor in Otology in Harvard University, read a paper on the question, What is the best Mode of Determining the Hearing of School Children; and how should Partially Deaf Children be instructed—in Mixed Classes with those who hear well, or in Separate Classes where due allowance will be made for their defective hearing? The following conclusions were adopted. 1. The frequency of partial deafness in children during the period of school life renders it advisable to make some definite provision in Public School Systems for compensatory instruction. 2. Since partial deafness is a comparative term, some provisions should be made for a proper determination of the degree of disability. 3. This is best accomplished either by establishing a series of speech tests to be used by the teachers, or by instituting competent medical examination at the hands of a medical supervisor of schools. 4. Partially deaf children, when hearing is not so defective as to require special instruction in articulation and lip reading, are better taught in mixed classes with those who hear well. 5. Partially deaf children, whose hearing is so defective as to interfere with the natural acquirement of articulation and to render the ear of little or no value as a medium for instruction, should be accorded the advantages of special instruction, of which instruction articulation and lip reading should form a part.

SECTION VIII.—SANITARY SCIENCE.

Disposal and Utilisation of Sewage and Refuse.—The discussion was opened by Dr. Henry Harts-horne, Professor of Hygiene in the University of Pennsylvania. The following conclusions which he offered were adopted. 1. Every plan for the laying out, or extension, of a city or town, should have as an indispensable part of it, a corresponding and co-extensive plan for the continuance or substitution of the natural drainage of the locality, and for the proper construction of a system of sewers. 2. The question in regard to the removal of waste and impurities from towns is not as to the maintenance of sewers, but as to whether they should be depended upon alone, or should be supplemented, more or less largely, by other means of conservancy. 3. Every sewer not supplied with a sufficient flow of water to secure the transportation of its contents is a nuisance, intensifying the evils it ought to remove. Ventilation of sewers will mitigate, but not entirely correct such evils. 4. Conditions sufficient for sanitary security are afforded by the discharge of sewage at a con-

siderable distance from a town, into the sea, or into a large and rapid river, whose water, at least for many miles below the exit of the sewers, is not used for drinking. 5. The earth-closet method of removal of excreta is, theoretically and practically, satisfactory in a sanitary aspect; the obstacles to its general adoption belonging only to economy and convenience. A supplementary proposition, affirming that the sewage-irrigation of arable land, well underdrained, is, where practicable, the most economical method of disposal of sewage, and is free from well-grounded sanitary objections, was not concurred in by the Section, which declined to express an opinion upon that subject, as still open to investigation.

SECTION IX.—MENTAL DISEASES.

The best Provision for the Chronic Insane.—Dr. C. H. Nichols, Physician and Superintendent of the Government Hospital for the Insane at Washington, gave the following conclusions, which were adopted by the Section. 1. Provision for the chronic insane should be made by constructing buildings in connection with the several hospitals for the insane. 2. It is not desirable to construct institutions solely for the care of the chronic insane.

September 8.—SECTION I.—MEDICINE.

Alcohol in its Therapeutic Relations as a Food and a Medicine.—Dr. Ezra M. Hunt, of Metuchen, New Jersey, summed up his paper in the following propositions, which were affirmed by the section. 1. Alcohol is not shown to have a definite food value by any of the methods of chemical analysis or physiological investigation. 2. Its use as a medicine is chiefly that of a cardiac stimulant, and often admits of substitution. 3. As a medicine it is not well fitted for self-prescription by the laity, and the medical profession is not accountable for such administration, or for the enormous evils resulting therefrom. 4. The purity of alcoholic liquors is not as well assured as that of articles used for medicine should be. The various mixtures when used as medicine should have definite and known composition, and should not be interchanged promiscuously.

SECTION III.—SURGERY.

Subcutaneous Division of the Neck of the Thigh-Bone.—Mr. William Adams, of London, read a paper on this subject. The following conclusions were adopted. 1. Bones can be divided subcutaneously like tendons; and that the operation of completely dividing the neck of the thigh-bone by a small saw, introduced through a small subcutaneous puncture, is a well-established surgical operation, attended with very little risk. 2. The long bones can be completely divided by the same method in any part of their length, with very little risk. 3. In a large proportion of these cases, the healing of the wound takes place by the first intention, and that no swelling, redness, or inflammation follows. These cases of subcutaneous osteotomy proceed as favourably as subcutaneous tenotomy. 4. In some cases a little suppuration from the track of the wound, amounting only to a few drops in the day, does occur for a week or more after the operation. 5. In a very few cases deep-seated suppuration occurs, but in only one of these, so far as at present known, has death resulted from pyæmia out of the twenty-three recorded cases. In one other case death was accelerated by the operation, or rather by the prolonged

suppuration which followed; the patient died eight months afterwards from albuminuria and phthisis. 6. The permanent result of the operation has hitherto generally been to correct the deformity and to obtain bony ankylosis with the limb in the straight position; but in several instances free motion has been obtained, and remained only for a few months, when it has been gradually lost. In a few cases free motion has remained for about a year, and we hope will persist through life, but time and further experience are necessary before this can be confidently stated to be a reliable result of the operation.

SECTION VIII.—SANITARY SCIENCE.

The Metrical System.—Dr. E. R. Squibb, of Brooklyn, submitted a paper on the Metrical System of Weights and Measures, and the following conclusions were adopted. 1. The metric system of metrology, though by no means faultless, is now by its almost universal acceptance practically inevitable; and, therefore, all means should be used whereby it may be gradually adopted, so as to avoid, as far as possible, the abrupt shock incident to its sudden and forcible introduction in the future. 2. The medical and pharmaceutical professions should be recommended to adopt the suggestion of giving the equivalent values of the old and new systems in their writings as an easy way of rendering them familiar in use. 3. The medical profession should be urged to use their influence in having the metric system introduced into the leading colleges and schools.

The following addresses and papers were also read.

General Meetings.—Address in Medicine, by Austin Flint, M.D., Professor of the Practice of Medicine in Bellevue Hospital Medical College.—Address on Hygiene and Preventive Medicine, by Henry J. Bowditch, M.D., President of the State Board of Health of Massachusetts.—Address on Medical Chemistry and Toxicology, by T. G. Wormley, M.D., Professor of Chemistry in Sterling Medical College, Columbus, Ohio.—Address on Surgery, by Paul F. Eves, M.D., Professor of Surgery in the University of Nashville.—Address on Medical Biography, by J. M. Toner, M.D.—Address on the Medical Staff of the United States Army and its Scientific Work, by Dr. J. J. Woodward, Surgeon U.S. Army.—Address in Obstetrics, by T. Parvin, M.D., Professor of Obstetrics in the College of Physicians and Surgeons of Indiana.—Address on Medical Jurisprudence, by S. C. Chaillé, M.D., Professor of Physiology and Pathological Anatomy in the University of Louisiana.—Address on Mental Hygiene, by John F. Gray, M.D., Superintendent Physician of the New York State Lunatic Asylum.—Address on Medical Literature, by L. P. Yandell, M.D., late Professor of Physiology in the University of Louisville.

Section I. Medicine.—The Etiology of Epilepsy, by Dr. W. F. Neffel.—The Influence of High Altitudes on the Progress of Phthisis, by Dr. C. Denison.—Treatment of Simple Ulcer of the Stomach, by Dr. H. Lebert.—Progressive Pernicious Anæmia, by Dr. B. Howard.—Sclerosis of the Vessels of the Lungs, by Dr. Rudneff.

Section II. Biology.—The Structure of the Sweat-Glands in Man, the Horse, and the Sheep, by Dr. Galani.—The Nerves and their Terminations in the Pleuræ of the Rabbit, the Dog, and the Cat, by

Dr. Leboeff.—The Microscopical Anatomy of the Nervous Apparatus of the Bronchi and Lungs in the Frog, the Rabbit, and the Dog, by Dr. Jantchich.—The Endings of the Nerves in the Skin of Man, by Dr. Jantchich.—The Occurrence of Fungous Growths in Solutions for Hypodermic Medication, and their Prevention by Salicylic Acid.

Section III. Surgery.—Penetrating Wounds of the Abdomen, by Dr. L. A. Dugas.

Section IV. Dermatology and Syphilology.—Leprosy, by Dr. F. H. Rodas.—What is the Disease known as Lupus? by Dr. Woskrijinsky.—The Unity or Duality of Venereal Virus, by Dr. C. R. Drysdale.—The Treatment of Seborrhœa, by Dr. C. Heitzmann.—The Treatment of Syphilis, by Dr. C. R. Drysdale.—Verrugas; a Disease peculiar to Peru, by Dr. G. C. Ward.—Measures to Prevent the Propagation of Venereal Diseases in Denmark, by Dr. S. Engelsted.—The Prevention of Syphilis, by Dr. C. R. Drysdale.

Section V. Obstetrics.—Management of Convulsions of Children depending upon a High Temperature of the Body, by Dr. T. K. Holmes.—Enucleation of the Ovarian Cyst, by Dr. J. F. Miner.—The Three most Important Obstetrical Instruments, by Dr. Lazarewitch.—Electrolysis, especially for the Cure of Ovarian Cysts, by Dr. F. Semeleder.—Paracentesis, Aspiration, and Transfusion, by Dr. Simon Fitch.—Uterine Hæmorrhage, by Dr. E. H. Trenholme.—Chronic Inversion of the Uterus, by Dr. J. P. White.—Retroversion of the Gravid Uterus, by Dr. T. F. Rochester.

Section VI. Ophthalmology.—Tumours of the Optic Nerve, by Dr. H. Knapp.—Statistics of the Condition of the Eyes of Scholars, by Dr. C. R. Agnew.—Orbital Aneurismal Disease and Pulsating Exophthalmia: their Diagnosis and Treatment, by Dr. E. Williams.—The Relations between Corneal Diseases and Refractive Lesions of the Eye, by Dr. G. T. Stevens.—Report of One Hundred Cases of Senile Cataract, by Dr. D. S. Reynolds.

Section VII. Otology.—Aural Vertigo with Variable Hearing, by Dr. C. H. Burnett.

Section VIII. Sanitary Science.—Vital Statistics of the City of Buenos Ayres, by Dr. G. Rawson.—Hospital Construction and Ventilation, by Dr. Stephen Smith.—The Preliminary Plans for the Johns Hopkins Hospital, by Dr. J. S. Billings, U.S.A.—An Universal Pharmacopœia, by Dr. E. R. Squibb.

Section IX. Mental Diseases.—On the Methods of Examination which will reveal a clear and decisive connection between the Symptoms of Insanity and the Pathological Lesions on which they depend, by Dr. E. C. Spitzka.

REPORTS OF FOREIGN SOCIETIES.

IMPERIAL ROYAL MEDICAL SOCIETY OF VIENNA.

May 5. *Malignant Lymphoma treated by Arsenic.* Dr. Von Winiwarter related a case in Professor Billroth's clinic, in which a remarkable result followed the treatment of a malignant lymphoma by arsenic. The patient, a man aged twenty-nine, said that in October 1874, after being stung by a wasp, he had swelling of the left axillary and cervical glands, and afterwards of the inguinal glands of the

same side. In the autumn of 1875 the glands of the right side began to enlarge, and he had dyspnoea and palpitation. On his admission on February 14, 1876, there was remarkable enlargement of the lymphatic glands of the neck, trunk, and upper limbs. The percussion-sound over the left half of the chest was dull; the heart was displaced to the right, and the spleen was considerably enlarged. The number of white corpuscles in the blood was not increased, and his nutrition was good. He was ordered to take Fowler's arsenical solution and tincture ferri pomati, five drops of each, every morning, the dose being increased by one drop daily. The largest daily dose of the arsenical solution in one day was forty-two drops; after this the quantity was reduced. There were no toxic symptoms. The result, as shown by a photograph, was very marked. The gland-tumours had in great part entirely disappeared, but some could still be felt. The dullness on the left side of the chest and the displacement of the heart still remained. The case was brought before the society, though still incomplete, as the man was leaving the hospital; but Dr. Von Winiwarter hoped that, under a continuance of the arsenical treatment, a permanent cure would be obtained.

On the Difference of Pressure between the Left Ventricle and the Aorta.—In order to test the opinion expressed in 1873 by Fick, that the pressure in the aorta was always greater than that in the left ventricle, Professor Stricker made a series of experiments on animals, and then employed a new method by which he confirmed his observations. He constructed an apparatus, of which the following is a description. A bulb constantly supplied with fluid (left ventricle) is connected with a tube, from which a branch protrudes perpendicularly (first manometer); this is provided with a valve, which, like the aortic semilunar valve, allows onward flow, but prevents reflux; from the more distant portion of the tube (aorta) arises perpendicularly a tube (second manometer), having attached to it a caoutchouc tube, the flow through which is regulated by a stop-cock. When the bulb is pressed rhythmically, the fluid rises in both manometers, but always stands higher behind the valve than before it. If the valve be held back, there is no difference in the height of the fluid in the two manometers.

The Human Ovum.—Professor Mayerhofer made a communication to contradict the hypothesis that the human ovary contains male and female ova. He said that if the man were older or stronger, and had coitus rarely, there was greater probability that a boy would be born; while, in the reverse case, the child would be a girl. Domestic animals (cows) impregnated at the beginning of heat, produced more female than male young; while, if they were impregnated at the end of heat, the reverse occurred. If it be correct that, among the orthodox Jews, who abstain from connubial rites during the menstrual period and for some days afterwards, more boys than girls are born, this may be explained by the fact that the ovum discharged from the ovary has already lost energy, is approaching abortion, and the woman can no longer impart her sex to it.

May 12. *A New Means of Diagnosis of Impaired Hearing.*—Dr. Albert Bing, in reading a paper on this subject, said that the cause of a high degree of deafness generally lay in inflammatory processes occurring in the mucous membrane of the tympanic cavity and their results. Among the latter were especially noticed impermeability of the Eustachian

tube, with anomalies in the tension of the chain of ossicles, inflammatory swelling of the mucous membrane, and collection of exudation in the tympanic cavity, and changes of a more persistent character in the ossicles. These changes are brought about by the growth, in consequence of inflammation, of connective tissue on the ossicles and on the walls of the tympanum. This product of inflammation undergoes changes, such as contraction and induration; the ossicles become abnormally adherent one to another and to the surrounding parts, and become rigid and ankylosed. In this way various degrees of impaired hearing, and even deafness, are produced. By the methods of examination hitherto in use, it has been indeed possible to ascertain the presence of resistance to the conduction of sound in the chain of ossicles; but it has not been possible to determine whether all or only one of the ossicles, and which, was affected, and which of them remained free. Dr. Bing believed that in the entotic use of the ear-trumpet he had found a fresh method of ascertaining whether the stapes was implicated, or remained more or less normal. By the entotic use, he meant speaking into the expanded end of the ear-trumpet, while the other end communicates directly with the tympanic cavity, a catheter having been introduced into the Eustachian tube. The author spoke further of the possibility of hearing through the Eustachian tube. On this point opinions were divided; the possibility being affirmed by Politzer and denied by Voltolini.

May 19. *On the Causes of the Occurrence of Convulsions in the Brain.*—Professor Meynert read a preliminary paper on a research which he had been carrying on for more than a year, for the purpose of ascertaining the cause of the cerebral convulsions, especially with reference to the idea already expressed by Halle, that they are produced through interference with the growth of the surface of the brain within the skull. According to this view the brain, if allowed to grow free outside the skull, would show other forms than when the retention of certain cranial axes opposes a resistance to the tendency to growth. The convolution thus produced must be developed in a direction perpendicular to the axes narrowing the brain. The origin of the convolutions from an interference with development is also supported by the thinness of the cortical substance within the sulci. The prosencephalon (*Vorderhirn*), if allowed to grow outside the skull and form a ball, would have straight sulci formed in it by arrest of development laterally, and sulci perpendicular to the others by interference with its growth in a direction from before backwards. Both these conditions should correspond with the production of dolichocephalism. In investigating the subject, Dr. Meynert made measurements of various skulls. In some animals he drew a line from the anterior edge of the ethmoid plate to the hindmost point of the upper angle of the petrous bone, and a transverse line passing over both external auditory meatus. In the human subject and monkey, the measurements used by Welker and Halle were employed. A comparison of the measurements of the skulls of the fox and dog with those of the cat and lion gives the following result:—

	Fox.	Dog.	Cat.	Lion.
Long diameter.....	100.0	100.0	100.0	100.0
Transverse diameter ...	77.0	85.0	97.2	98.7

These gradually increasing brachycephalic proportions correspond with stages of the development of the directions of the convolutions. The fox has the

relatively largest skull, and possesses a brain the sulci of which are almost purely longitudinal. In the dog there are transverse convolutions and transverse anastomoses; while in the cat-tribe, in which the skull is more quadrate, all the longitudinal sulci are interrupted by typical, almost perpendicular gyri, which form the anastomoses. In the seal and elephant the skulls are so brachycephalic that the percentage of the long diameter becomes negative:—

	Seal.	Young Elephant.	Old Elephant.
Long diameter	100.0	100.0	100.0
Transverse diameter	118.9	128.3	123.3

In the seal the compression of the long axis of the brain by brachycephalism as well as by compensation through an extraordinary height of the posterior part, not developed under the counter-pressure of the cerebellum, is expressed, through a perpendicular (instead of longitudinal) course of the olfactory lobes, by a perpendicular distance of an inch between the optic nerve and the olfactory bulb, as well as by the more remarkable phenomenon of a vertical Sylvian fissure. The convolution surrounding the Sylvian fissure is heart-shaped, through want of room for its development in the longitudinal direction. In the elephant's brain, the results to be expected from brachycephalism are to be found; viz., convolutions perpendicular to the long axis of the skull. Leuret pointed out more than thirty years ago that in this animal, instead of two transverse central convolutions as in man, there are three, and two central sulci in place of one. With regard to the brachycephalism of the quadrumanous skull, Dr. Meynert has convinced himself by the examination of five skulls (including those of the Chimpanzee and Orang) that the relations between the longitudinal and transverse diameters, observed in human dolichocephalism and orthocephalism, do not exist in the skull of monkeys, but only a strongly marked brachycephalism exceeding somewhat that of man. Similar relations to those above described have hitherto been found by Dr. Meynert in the measurement of skulls between the seventh and eighth months of foetal life. The gradations of convolutions in the animals above mentioned remain unchanged.

A Case of Cystin in the Urine.—Dr. Löbisch had examined the urine of a young American physician. It presented no unusual appearance, but always had an acid reaction, and the sediment contained crystals of cystin. He made analyses of the urine for fourteen days. In the literature of the subject, it is stated that cystin in the urine is always attended with diminution of the excretion of urea and uric acid. As cystin is a derivative of albuminous bodies, it must be assumed that the reduction of urea and uric acid can only be in proportion to the amount of nitrogen carried off by the cystin. On the other hand, sulphuric acid, which is regarded as a product of oxidation of the albuminates and of the decomposition of sulphates, may also be changed by the occurrence of cystin in the urine. As cystin contains sulphur, Dr. Löbisch determined on each of fourteen days the daily amount of urea, uric acid, cystin, and sulphates. The average result of ten days was:—urea, 33.28 grammes; uric acid, 0.4555; cystin, 0.3930. In this case, then, about four decigrammes (six grains) of cystin were excreted daily. The proportions of urea and uric acid were normal. The cystinuria produced no constitutional disturbance; but might at a future time lead to the formation of a cystin calculus.

May 26. *Morphiomania*.—Professor Leidesdorf, after remarking that several cases of morphiomania had been reported in the course of the past year, said that he thought that the relation of five cases which had occurred in his own practice would be of use as a warning against the too frequent use of the drug, and as a contribution to the knowledge of its physiological action. The first case was that of a lady, aged thirty-five, who for two years had suffered from the painful results of a perimetritis. Afterwards she herself injected morphia (as much as six grains for a dose), and fell off in health. The sudden withdrawal of the morphia was attended with considerable psychical irritation and severe diarrhoea; the patient, however, recovered in eight days, and was discharged cured four days afterwards. In the second case a man injected about $4\frac{1}{2}$ grains of morphia daily to relieve pain in the region of the spleen. He sold his Pravaz's syringe in order to deprive himself of the remedy, but could not wean himself from its use. The sudden withdrawal of the morphia was attended with persistent loss of sleep, with hallucinations, irritability, diarrhoea, and collapse. He was, however, discharged in a few weeks. The third case was that of a high official who injected $1\frac{1}{2}$ gramme (twenty-two grains) daily to relieve painful perostitis. He had profound melancholia, and attempted suicide. He was treated by baths and chloral-hydrate, and recovered; but relapsed and committed suicide. The fourth case was that of a man, aged thirty-one, who suffered from sciatica. Treatment at Gastein was not attended with success; and during four years he had used morphia in doses of thirty-seven grains subcutaneously, or forty-five grains internally. As the sudden withdrawal of the morphia produced alarming collapse, the quantity was gradually reduced; and under the use of chloral-hydrate, baths, wine, etc., he completely recovered in a few weeks. The fifth patient was a medical man, who wished to observe in his own person the effects of the use and disuse of morphia. He arrived at doses of twenty to twenty-five grains, became dull and sleepy, and could no longer do without the injections. Under the use of acetate of morphia he lost appetite, and had pains and abscesses; on many occasions (perhaps from injection into the veins) he had congestion of the head, difficulty of breathing, and formications over the whole body, lasting several seconds. After unsuccessful attempts to desist from the habit—sensitivity being greatly increased by the sudden withdrawal of the morphia—a cure was effected in eight weeks by the gradual reduction of the quantity, until total abstinence from the drug was arrived at. The patient must be entirely under the control of the physician, as deception is otherwise certain; all the patients had their syringes and a supply of morphia for several weeks. A careful watch must be kept during the treatment (eight or ten days) to prevent attempts at suicide. The cure is aided by the use of wine, warm baths, and chloral hydrate.—Dr. Eisenschitz related a case under his observation, in which both the patient and the physician made repeated attempts to stop the practice, but without success. The daily dose was 15 decigrammes ($2\frac{3}{4}$ grains). The patient, a man aged sixty-seven, became stupid and almost completely lost speech. By persuasion, restraint, watching at night, the use of chloral-hydrate, etc., Dr. Eisenschitz succeeded in entirely stopping the use of the drug. During the first thirty-one hours of the treatment the patient

took no food, was irritated during seven or eight days, and had severe diarrhoea.—Dr. Winternitz said that, in cases of morphia mania, the lowering of the temperature by baths of 68° to 77° Fahrenheit was borne ill or not at all; while, on the other hand, the application of hot cloths along the cervical spine had some effect in reducing the desire for morphia.

June 2. *Tumour of the Alveolar Processes*.—Dr. Weinlechner showed a young woman aged twenty, who had a morbid growth on the alveolar processes of the upper and lower jaws. It was lobulated, very firm, and after removal presented on microscopic examination the characters of fibro-enchondroma. The right half of the lower jaw was excised, and the growth was removed from both upper maxillary bones by the hammer and chisel.

June 9. *Catheterism of the Ureter*.—Dr. Grünfeld described the attempts made by Tuchmann and Simon of Heidelberg, to reach the vesical opening of the ureter. While the former laid hold of the mouth of each ureter in a man by means of an instrument like a lithotrite, the former performed rapid dilatation of the urethra in a woman, and guided a catheter into the mouth of the ureter along his finger. The method followed by Dr. Grünfeld differed from these in the following respects; that the operation was performed with a full bladder, and under the control of the eye. The vesical orifice of the ureter was first sought out by means of a fenestrated endoscope. This was generally attended with no difficulty. When the instrument reached the inner border of the orifice of the urethra, it must be inclined at an angle of thirty to thirty-five degrees from the meridian plane of the body towards the side, and the outer end must be held upwards and outwards. On now pushing the endoscope two and a half or three centimetres into the bladder, the orifice of the ureter often comes into view at once; if not, a few manipulations will discover it. The sound to be introduced into the urethra is carried into the bladder along with and parallel to the endoscope. Dr. Grünfeld had a sound constructed, which could be bent by a simple mechanism at one or two centimetres from the end, and again straightened. The operation is performed in the following way. The orifice of the urethra is first discovered by means of the endoscope. The urethral sound is now introduced into the bladder along the side of the tube (on the left side when the right ureter is to be reached, and *vice versa*). The lower end of the sound is now bent at a right angle, so as to meet the field of vision of the endoscope. If the proper direction have been given to the end of the sound, it is carried with an equable pressure along the base of the bladder into the orifice of the ureter. A few attempts are sufficient to make it enter. When it is seen with the endoscope that the sound has entered as far as the joint, it is straightened (care being taken lest it slip out), and is pushed on into the ureter. As yet, Dr. Grünberg had operated only on women, in whom the discovery of the opening of the ureter was not attended with the same difficulty as in men. He had only used a sound; but the introduction of a catheter ought to be attended with no difficulty.

Cranial Tumours in a Child.—Dr. Weinlechner communicated the particulars of the case of a boy, aged two, who had on the right parietal bone a tumour nearly as large as a fist and a half; it was divided into a larger posterior and a smaller anterior portion. The posterior part of the tumour was punc-

tured, and two ounces of fluid, having the chemical character of cerebro-spinal fluid, escaped. Dr. Weinlechner afterwards ascertained that it was of traumatic origin, and that the case was one of meningocele, or, more correctly, of hydrocele of the brain. When the case was brought before the society on a previous occasion, Dr. Rokitsansky expressed the opinion that the sac was a secondary formation, which could scarcely communicate with the interior of the brain. Dr. Weinlechner subsequently punctured the anterior part of the tumour: when, after penetrating to the depth of an inch, cerebro-spinal fluid was evacuated. Twenty-four hours after the operation the child appeared well; but at the end of thirty-six hours symptoms of meningitis appeared, and death took place on the eighth day after the operation. At the *post mortem* examination, which was made by Dr. Kundrat, there was found a sac lined with pus, and having two openings, one leading into the brain, the other into the subarachnoid space. The anterior part of the tumour was an encephalocele, the posterior a meningocele. The injury had affected not only the right but the left parietal bone, in which an united fissure about three inches long was found. In the second operation the lateral ventricle had been punctured, and this gave rise to the meningitis. Dr. Weinlechner also referred to four other cases, all in children, in which injury was followed by the formation of cystoid swellings, containing cerebro-spinal fluid. Two of those cases were observed by himself, one by Dr. Billroth.—Dr. Rokitsansky thought that the swelling had its origin in a large extravasation between the pericranium and skull and between the skull and dura mater, which was lacerated at one part.

June 16. *The Treatment of Diseases of the Nose.*—Dr. Catti showed gelatine bougies charged with various medicines—sulphate of copper, sulphate of zinc, tincture of rhatany, carbolic acid, etc.—for use in diseases of the nose. They were from 3 to 4½ inches long, and from 0·15 to 0·25 inch long, thicker at one end than at the other. The bougie, held at the thin end, was introduced into the nostril, and carried onwards by rotatory movements. It might be introduced into either the lower or the middle nasal fossa, or quite vertically. When it had entered the nasal passages, it could be seen by the rhinoscope between the septum and the lower turbinated bone, or between the middle and lower turbinated bones. If it reached more than a few millimètres into the naso-pharyngeal space, its harder end must be drawn forward and a portion cut off, otherwise it was liable to pass into the fauces or mouth. After the operation, the nostril was plugged with charpie. In two or three hours the bougie was completely dissolved. Dr. Catti had obtained good results from this treatment in daily practice for some time in cases of chronic nasal catarrh, naso-pharyngeal catarrh, hypertrophy of the tonsils, and ozæna. All the patients bore the treatment well.—Dr. Roth had for some time used gelatine bougies in diseases of the nose. He preferred conical bougies, which filled the nostrils better. In a case of severe epistaxis, he had obtained excellent effect from this method.

Retained Fœtus in an Old Woman.—Dr. Chiari showed the organs of a woman, aged eighty-two, who died in the General Hospital of pneumonia some days previously. During life, a tumour of the size of a man's head could be felt in the hypogastric region; it was connected with the uterus. The patient had

noticed the swelling since 1827, after her last pregnancy. At that time she felt herself to be pregnant; but, after eight months, no labour came on, and from this time she constantly had the abdominal tumour, which was unattended with pain, and on account of which she never had medical advice. The uterus was very large, and with its appendages on the right side were quite normal. On the left, there was a Fallopian tube five inches long, but the ovary of that side could not be found. The tumour was connected with the uterus, to which it was adherent, and also to the omentum and to the peritoneum in Douglas's pouch. It was about seven inches long and six inches broad, and in some parts had a hard, at others a soft feel. On laying open the tumour, it was found to contain an encapsuled fœtus. The section revealed distinctly the face, spinal column, internal organs, and the umbilical cord, which passed into a structure which on microscopic examination was recognised as a placenta. Of the extremities, all were found except the left arm, which might have become incorporated with the membranes when the change of position of the fœtus took place. The structure of most of the other organs could not be made out; and they contained deposits of lesions, fat, pigment, and especially of lime-salts. The muscles of the skeleton were in the best state of preservation; the striæ could be distinctly seen in them.—Dr. W. Schlesinger related the particulars of a case of retention of a dead fœtus in the abdominal cavity of a woman whom he had under observation during two years. The patient was aged thirty-four. Her first delivery, a normal one, took place fifteen years ago, she believed herself to be again pregnant. In the course of her pregnancy, she had extraordinary distension of the abdomen, the breasts became turgid and colostrum occasionally escaped, and she said that the movements of the child were very distinct. In July, 1874, in the ninth lunar month of her pregnancy, some pains as of labour set in. Labour, however, did not take place; but the pains increased, and on the third day she felt as if a laceration of something in her abdomen had suddenly occurred. From this time the distension from which she had suffered ceased; and the only symptoms for some weeks were those of moderate peritoneal irritation. There was no hæmorrhage during the pregnancy; but some days after she had the labour-pain, there was a discharge of blood which lasted nearly six weeks. When Dr. Schlesinger first saw her, in the beginning of September, the abdomen was as large as at the full term of pregnancy, though irregularly distended; it had a uniformly hard and smooth feel, as if it contained a solid tumour. At one part alone, four finger-breadths above the umbilicus, at the middle of the upper limit of the tumour, a protuberance like a finger-joint was felt. At the right side, the swelling extended as high as the ribs, but not so high in the middle as on the left. Immediately above the symphysis pubis, the abdominal integuments could be pushed in to some extent between the bone and the tumour. The latter, however, was but slightly movable. There was very little tenderness on palpation of the abdomen; but pressure on the tumour in the right hypogastric region (where the patient had from the first complained of pain) produced discomfort. Percussion over the tumour gave a hollow sound everywhere. Nothing could be heard on auscultation. Vaginal examination showed that the vaginal portion of the

uterus was strongly directed backwards and drawn up; the anterior vaginal vault was somewhat pressed on, but not quite filled with a body, which appeared to have no direct connection with the swelling felt above (anteflexion of the enlarged uterus). There was an abundance of milk in the breasts; no fever. The patient complained principally of pains in the right side of the abdomen, which became worse in the evening especially, and prevented her from lying long on the left side. There was very little sanguineous discharge. Subsequently to this, measurements made at intervals of two or three months showed a steady decrease in the circumference of the abdomen; and at the same time portions of the tumour acquired a softer feel. In speaking of the differential diagnosis, Dr. Schlesinger said that the case might be supposed to be one of rapidly growing fibroid of the uterus or ovary, but that the etiological history and the course of the case opposed this supposition. The woman had menstruated regularly during the last year and a half, had no abnormal discharge of blood, and her general health was good. The case, Dr. Schlesinger believed, was probably one of primary abdominal pregnancy.

On the Constancy of a Convolution in the Temporal Lobe.—Dr. Heschl described a convolution which he had found to be of constant occurrence, lying transversely on the surface of the temporal lobe, in a direction from within outwards. It had already been seen by many, and was figured by Heule; but no notice had been taken of it by other authors. Dr. Heschl's researches had proved to him that this convolution is the most constant and most early in appearance of all the cerebral convolutions. There are in many cases three such convolutions, in others two; but the one first referred to is constant. It is from 4 to 4½ centimètres long. It is sometimes divided by a notch; sometimes has a peculiar transverse division, showing a narrow base, and a round, indented, or angular surface. It always proceeds from the upper temporal convolution, generally by two roots; but sometimes the first temporal convolution passes into it in an arched form. Dr. Heschl's researches have further shown that this is the first convolution which can be observed in the fœtus. Indication of its appearance may be seen as early as the fifth or sixth month.

ACADEMY OF MEDICINE IN PARIS.

Sept. 26. *Movements of the Spine.*—M. J. Guérin read a memoir on the flexion and inclination movements of the vertebral column. The lateral movements of the spine present for consideration from the base to the summit:—1, an inclination movement of the entire column on the sacrum; 2, a flexion movement at the level of the eleventh and twelfth dorsal vertebrae, or of inclination of the dorsal on the lumbar region; 3, an inclination movement of the whole of the cervical region on the dorsal region; 4, an inclination movement of the head on the extremity of the cervical column; 5, a lateral flexibility decreasing above each of these three points, and a rigidity decreasing above them.

Oct. 8. *Feeding of Children.*—M. Magne read a memoir on the suckling and weaning of children and young animals. He asked why artificial feeding, so favourable to young animals, is generally regarded as disastrous to children; why solid food, added to

milk, or even substituted for it, which are advantageous to cats and calves, are hurtful to infants? He did not agree with the opinion which prescribes that infants should be fed on mother's milk until they are a year old, and that after that time they should be fed on bread and milk, rice-milk, etc. These latter foods appeared to him insufficient to take the place of milk, and milk itself is insufficient for children from seven to ten months old. They require larger proportions of phosphates and albuminoid substances than during the first months of life for the requirements of ossification and muscular development, and the mother's milk cannot during twelve months increase in the proportion of the wants of the nursing. M. Magne had often ordered raw eggs for children from eleven to twelve months old not able to walk, and after several days of this regimen they had acquired enough strength to walk alone. Breeders of young animals who have modified the system of training them, and wean the young ones very quickly, obtain incomparably better results. According to M. Magne, the prejudice which exists against the artificial nursing of children and the substitution of more substantial and less watery foods for milk is an unjust one. It is by artificial feeding, commenced from birth, with the addition of linseed and oil-cake, that breeders obtain those finely shaped bulls and powerful horses which gain the prizes at shows and races. The more compact is the composition of an aliment, the more nutritious it is. We should not try to improve natural products for children by disengaging their quintessence; we should not give the suckling infant superfine flour or grits, or oatmeal, but the whole grain, comprising the bran and the husk. More meat should be used in the alimentation of the suckling babe, and that not only in the form of juice or extract of meat. To sum up, raw eggs, chopped boiled eggs, meat, flour, and leguminous vegetables, should, according to M. Magne, enter largely into infant diet.—M. Bouley charged M. Magne with establishing an inaccurate comparison between the herbivora and the carnivora; the herbivora have the faculty of seeing and walking at the time of their birth, which shows that they can live an independent life and dispense with the mother's milk sooner than the carnivora. It would therefore be dangerous to conclude that what occurs with the herbivorous nursing is useful for the human infant.—M. Depaul entirely coincided with these views, and called to mind that it is precisely by substituting in a hasty manner alimentation by broth, eggs, etc., for mother's milk, that the mortality of early infancy is increased in a formidable proportion. Besides, infants do not die only because they are badly nourished, but because they are scantily clothed, exposed to cold, and placed under unhealthy conditions.

Oct. 10. *Feeding of Children.*—MM. Devilliers, J. Guérin, and Marotte, returning to the question of the artificial feeding of new-born children, protested against the hasty and dangerous conclusions formulated by M. Magne on purely zootechnic data.—M. Magne, disavowing any competency in the matter of the treatment of children, acknowledged that he had been advocating a bad cause.

Foreign Body in the Oesophagus; External Oesophagotomy.—M. Cazin, of Boulogne, read a case of this kind, in which he insisted on the following points. 1. The method of dissection of the lateral lobe of the thyroid, advocated by Duplay, was rendered more laborious in this special case by the existence

of a goitre. 2. It is well to have recourse to the separate suture of the two layers of the œsophagus, so as to ensure coaptation, and to place the internal suture out of danger of contractions of the muscular layer. 3. The sound (introduced by the nostrils) should be left *in situ* as long as it can be borne.

ACADEMY OF SCIENCES IN PARIS.

Aug. 21, 1876. *Bacteria*.—M. Bastian replied to M. Pasteur that the cause of the negative result of his experiments is not the temperature of the boiling, but the addition of potash in excess. He maintained that the temperature of fifty degrees Centigrade is very liable to bring on the spontaneous generation of bacteria, and that potash in excess completely destroys the germs of these parasites.

Sept. 11. *Trephining*.—M. Sédillot communicated a paper on preventive trephining in fractures with displacement of splinters of the internal or vitreous table of the cranium. The author, in his former communications (*Comptes rendus* of Oct. 12 and Nov. 16, 1874, tome lxxix.) on the fractures of the internal or vitreous table of the cranium with displacement of splinters, had demonstrated that trephining is the only method of preventing inevitable and nearly always mortal complications. The present paper contained one hundred and six confirmatory cases, partly derived from the publications of MM. Chauvel, Gross, Cochu, T. and J. Boeckel, and Schalk, and several from M. Sédillot's own experience. Out of the one hundred and six wounded, seventy-seven were trephined; twenty-nine were not operated on; nine trephinings were preventive—that is to say, they were performed before the appearance of primitive or consecutive accidents. After the first day sixty-eight curative operations were done with the object of remedying grave complications, such as paralysis, loss of consciousness, convulsions, coma. Amongst these twenty-one operations were performed in the first five days of the wound, and forty-seven were delayed until after that time. Out of a hundred wounded patients the external table of the cranium was found unfractured in twenty-one cases; and as the majority of the patients at first showed in few symptoms, their wounds were frequently thought to be but slight. Out of the twenty-nine wounded suffering from vitreous fractures with splinters not trephined, there were one cure and twenty-eight deaths; out of the seventy-seven trephined, twenty-nine cures, eighteen deaths. Nine preventive trephinings gave six cures and three deaths; sixty-eight curative trephinings gave twenty-four cures, forty-four deaths; twenty-one early trephinings, eight cures, thirteen deaths; forty-seven retarded operations, fifteen cures, thirty-two deaths. These results, according to the operator, were the confirmation of the facts and precepts laid down in his preceding communications. The mortality was in proportion to the delay in the application of the trephine; two-thirds of the patients were saved by preventive trephining; more than a third by early trephining; less than a third by retarded trephining, and only one in twenty-nine in the cases where recourse was not had to trephining. M. Sédillot reminded his audience that he had proposed, in cases of doubt or hesitation as to the existence of a vitreous fracture, to have recourse to explo-

rative trephining which Dr. Gross, of the Faculty of Medicine of Nancy, had performed under very bad conditions of general health. This operation was performed for the first time, and will certainly be again attempted. The patient, it is true, died, but death must not be attributed to the laying bare of the diploë. The suppurated state of the dura mater showed that it had received an indirect contusion, and the uncovering of the diploë does not usually bring on accidents, as we see in superficial excisions of the cranium by sabre-wounds. Surgical removal of a bony fragment of the fractured external table does not cause contusion of the diploë, divided and laid bare, in all the applications of the trephine. Therefore it is allowable to renew this attempt. M. Sédillot also analysed ten cases of trephining to demonstrate the fact that complication of vitreous fractures, the time elapsed after the wound, the circumstances under which the wounded are placed, and their degree of vitality, have a great influence on the condition of the patients who succumb quickly to, or resist in a surprising manner, nearly identical lesions.

Oct. 9. *The Flow of Blood through small Tubes*.—M. Haro presented a note on the flow of blood through tubes of small calibre (Graham's transpirability). Having constructed a special apparatus (the transpirometer) the author endeavoured to determine the degree of viscosity of the blood. The results obtained were as follows. 1. Heat greatly accelerates the flow of defibrinated blood, and this effect is the more decided according as the blood is richer in corpuscles, whilst heat acts upon serum almost in the same way as on distilled water. M. Haro has also remarked that this action is much more decided when the flow of the defibrinated blood is very slowly effected through a very contracted tube. The course of the blood in the capillaries of the organism being much slower than the artificial flow of the defibrinated blood, the rapidity of the circulation in these small vessels would necessarily, under the influence of temperature, show considerable divergences. The experimenter has also observed that defibrinated blood through which a current of carbonic acid gas has been passed for some length of time, and which has afterwards been filtered through a fine cloth, to remove all the gaseous bubbles, flows more slowly than the same blood reddened, by changing from vessel to vessel in the open air; under the influence of this gas the transpirability of calf's blood rose from 5,612 to 6,076. The author also stated that sulphuric ether not containing a trace of alcohol retards the flow of defibrinated blood, serum, and water. This result is the more surprising from the transpirability of ether being represented by the number 0,299—that is to say, this liquid flows three times as quickly as water. Chloroform retards the flow of water and serum, whilst it accelerates the flow of defibrinated blood. This double action, which at first sight seems paradoxical, is however very rational; thus, on the one hand, there is nothing astonishing that chloroform, of which the transpirability is from 0,396 to 15 degrees, acts on the water in an analogous manner to ether—that is to say, by slackening the flow. On the other hand, the liquid facilitates the passage of defibrinated blood through the capillary tube. This fluidification of the blood may explain the frequency, and especially the weakness, of the pulse produced when inhalations of chloroform are unduly prolonged.

REVIEWS.

Lectures on Orthopædic Surgery and Diseases of the Joints. By LEWIS A. SAYRE, M.D. 471 pages. 274 illustrations. Published by D. A. Appleton and Co., New York; and J. and A. Churchill, London. 1876.

In the historical sketch which follows the introductory lecture, the first performance of tenotomy in America is attributed to Dr. David S. Rogers in 1834. Two years elapsed before it was performed in England.

The five next lectures, covering thirty-eight pages, embrace the subject of Deformities. Dr. Sayre relates three cases of what he calls 'reflex paralysis' dependent on 'congenital phimosis and adherent prepuce,' and one case of 'threatened chorea cured by removing supernumerary toes and fingers,' which were a burden to the possessor's mind. The plates of the feet and hand after operation are, to say the least of them, flattering, for no amputation scars are anywhere visible.

In speaking of the principles of treatment of deformities, Sayre gives a law by which the surgeon may determine whether the case does or does not require operation. 'Place the part contracted as nearly as possible in its normal position, by means of manual tension gradually applied, and then carefully retain it in that position; while the parts are thus placed upon the stretch, make additional point-pressure with the end of the finger or thumb upon the parts thus rendered tense; and if such additional pressure produce reflex contractions, that tendon, fascia, or muscle must be divided, and the point at which the reflex spasm is excited is the point where the operation should be performed.' If no reflex contraction occur, no operation is indicated. Constant elastic tension should permanently overcome such deformity.

On the important question of the immediate after-treatment of cases operated on, Dr. Sayre pronounces strongly in favour of restoring the deformed parts at once as nearly as possible to their normal position. He admits some exceptions; for instance, in all cases of fibrous ankylosis producing articular deformity in which section of the contracted parts becomes necessary, the external wounds are to be permitted to heal before force is applied to break up the ankylosis. Formerly, he belonged to those who taught that the limb was to be secured in its deformed position until the external wound had closed, and the inflammatory action had subsided. The propriety of allowing the severed ends of tendons to be cemented together, and of gradually stretching the bond of union at a suitable period after operation, is not discussed. The writer contents himself with giving the result of his experience in a positive form. We are not informed whether, in his cases of tenotomy, the ends of the severed tendons are reunited or acquire new peripheral attachments at a distance from each other. In lecturing on talipes from spastic and paralytic causes, he teaches that the deformity is to be overcome as far as possible immediately after operation, and the limb secured in a natural position.

We are glad to find that the author strongly insists on the propriety of commencing treatment in cases of talipes immediately after the birth of the infant. He is an advocate of the principle of elastic

extension practised in cases of talipes by Mr. Barwell. (He fully describes this mode of treatment, quoting Mr. Barwell's own account of it.)

His observations on electricity, manipulation and 'massage,' dry heat, baths, inunction, and gymnastics, are not such as to require any special notice. Of medicinal agents, he praises strychnia, and refers to the subcutaneous injections of this drug; but, as he does not enter into details, our knowledge of the subject has not been advanced.

Having now afforded his class a general outline of the subject, he commences the seventh lecture with a study of special deformities. Talipes is first spoken of. In describing the mechanical construction of the normal human foot he states here, and in the lecture on Diseases of the Ankle-joint he repeats it, that at the tibio-tarsal joint or ankle any lateral movement is prevented by the projecting malleoli on each side, which fit so closely to the sides of the astragalus as to permit no motion at the joint except those of flexion and extension, or of pointing the toes up or down. Turning the toes out or in is produced by rotation of the toe and leg at the hip-joint, or by the revolving motion of the fibula produced by the contraction of the biceps and tensor vaginæ femoris when the knee is flexed. Now, this is not absolutely and entirely the case. The posterior part of the astragalus is narrower than the anterior. When the toes have been pointed downwards, the narrower part of the astragalus has been brought between the malleoli. The consequence of this is, that the astragalus can now move from side to side, and the toes may be directed inwards or outwards, and some lateral movement imparted to the whole foot.

Farther on, when he is speaking of the pathology of talipes valgus in its acquired form, he attributes it primarily to paralysis of the tibialis anticus muscle. Projection of the head of the scaphoid bone is mentioned, but no reference is made to the head of the astragalus or to the condition of the calcaneo-scaphoid and other ligaments, which must have yielded and stretched as the deformity progressed. Dr. Sayre holds strongly to the opinion that most cases of congenital talipes are paralytic in their origin rather than spastic, and appears to found his belief on the great ease with which he can, when examining the infant immediately after birth, restore the foot nearly or quite to its normal position.

In the tenth lecture, after having specially described the treatment of talipes by manipulation, roller bandage, gypsum bandage, gutta-percha and leather splints, plaister, and the elastic extension apparatus of Mr. Barwell, he makes this very important observation. 'The permanent fixing of any limb or joint in a stationary apparatus, thus preventing even the healthy muscles from contraction and relaxation, will sooner or later cause even these muscles to become atrophied and undergo fatty degeneration.' He strongly deprecates the use for any length of time of any form of appliance which shall prevent or materially limit the proper movements of the foot. Dr. Sayre's experience has been similar to that of most surgeons. 'Unfortunately,' he says, 'the great majority of cases that fall under our care require tenotomy, and almost without exception require such operative interference, simply because a rational method of treatment has not been put in practice early in their history.'

After tenotomy, he insists that the deformity is to be overcome as far as possible and the foot restored

to its normal position, and as soon as the wound has healed (a week to ten days) passive movements are to be commenced.

In bad cases of talipes varus and equino-varus, it commonly happens, after suitable tenotomy and restoration of the foot to its normal shape, that there remains a tendency on the part of the whole limb with the foot to invert. Reynders, the instrument-maker, has recently made for Dr. Sayre an apparatus for overcoming this rotation. It seems useful and simple. Our own instrument-makers try to meet the difficulty by fixing the leg-iron into the sole of the boot at an angle. Reynders' instrument appears to afford the advantage of a power of graduating the angle by a screw. For double talipes he describes separating rods, which are to keep the feet apart and everted.

The next fifteen pages are occupied by a lecture on bunions, corns, ingrowing toe-nails, bow-legs, and knock-knee. Amongst these he describes an interesting case of displacement of the tendons about the ankle-joint.

The lectures on Diseases of Joints, to which we have looked with some interest, cover 207 pages. We soon meet with topics which arrest our attention. We pass by a repetition of his view of the anatomy of the ankle-joint, and stop at the etiology of joint-disease. Sayre will not allow that the origin is in scrofula. He states, 'There is no scrofula about it in the vast majority of cases.' This statement contains an admission that the diseases are scrofulous in some cases, but he does not go farther, as we think he should have done, so as to draw the distinctions between the diagnostic signs and symptoms of the white swelling non-scrofulous and white swelling scrofulous. He does not even lay down a definition of what he understands by scrofula. If in his mind scrofula be synonymous with tubercular disease, then he is right to deny that joint-disease is commonly scrofulous in its origin. We think it must be admitted that the disease known as white swelling is distinctive in its signs and symptoms. These latter differ from those of synovitis, and of syphilitic, rheumatic, and gouty diseases of the joints. They commonly commence in early years, before the age of fifteen, when scrofulous diseases prevail. They do not commonly begin after that age. On the other hand, we meet with children suffering from chronic disease of the joint, which has not at any time in its history presented white swelling. We are not prepared with a new classification of diseases of joints, but we cannot agree with those surgeons who make the sweeping statement that diseases of joints commonly designated scrofulous are traumatic in origin rather than specific. We would prefer such a classification as Dr. C. Hueter gives in his work on Joint-Diseases (1871).

Dr. Sayre traces back the origin of articular diseases to traumatic lesions, and especially to what he calls a 'blood-blisters.' By this he means a small quantity of blood effused behind the synovial membrane, or between the cartilage and bone. From this centre he traces the spread of disease through inflammation, suppuration, caries, and necrosis. We should have felt better satisfied on this point, if he had supported his theory by a report of a *post mortem* examination of one of the so-called 'blood-blisters.' We do not deny that arthritis commences from such a lesion. We do not deny that injury is commonly the starting-point of a joint-inflammation; but until pathologists—he and others—have clearly

established the want of connection between the peculiar progress of such cases as those of white swelling of joints and the scrofulous diathesis, we must adhere to our opinion that the peculiar course taken by these cases is governed by a special condition of general health. This question of scrofula is discussed again and again in the lectures on diseases of the various joints, especially the knee and hip, but only to emphasise the author's view that the scrofulous state is the result of the arthritic disease, and not the cause. We nowhere meet with any definition of the term.

Elastic compression is advocated by the author as the suitable early treatment of synovial effusions into the ankle, knee, and similar joints. The pressure should be uniform, and made with the aid of sponges and bandage, or double India-rubber bags. Dr. Sayre demonstrated the mode of applying these when he visited London in 1871. The class of cases demanding such treatment is that of bruises and sprains, which involve the synovial membrane, and are followed by effusion and over-extension.

At page 165, in the course of the lecture on Diseases of the Ankle-joint, we meet with an extraordinary statement that you cannot 'exsect' the joint unless by transverse incisions which must cut across muscles and nerves. He goes on to mention a plan of setoning, as if no such operation as that described by Mr. Hancock had ever been performed. We do not doubt that oakum setons are successful; but, judging by the cases mentioned, the plan is a very tedious one, and may have to be repeated more than once. Here it is convenient to notice a statement of an opinion with which we cordially agree, that the long-continued use of hot poultices to swollen and suppurating joints is always injurious.

The mode of examining joints is everywhere most practical and ingenious.

He admits that cartilage is not supplied with nerves, and yet he states that when inflamed they become exceedingly sensitive, but what proofs he possesses of this we are not informed.

We know no author who so satisfactorily explains the phenomena of nocturnal pains in joint-diseases.

As might have been expected, the symptomatology of Hip-joint Disease is very fully and ably detailed. This part of the lectures will be read with great interest. Without defining what he means by dislocation, he denies at considerable length that the head of the femur ever becomes dislocated except by accident; to use his own words, 'instead of a luxation of the hip, we have in fact a displacement of the acetabulum.' He adds, 'As long as the acetabulum retains the remnants of the head of the femur within its cavity, it should not be called luxation of the femur.'

In reviewing the treatment of diseases of the knee and hip-joints, besides the elastic compression recommended for the knee, we notice that the advantages and disadvantages of the aspirator have not escaped his attention. Nor does he omit to call especial attention to 'pressure on the main trunk of an artery leading to any part in danger of inflammation, in such manner as to diminish the supply of blood, to prevent inflammation by partial starvation.' He asserts that he has witnessed practical benefit from this plan of treatment in many serious operations.

We are disappointed in the lecture on 'Excision of the Knee-joint.' The mode of operating is described, and the apparatus (Packard's) for fixing

the limb after operation, but guides with regard to the cases demanding exsection are wanting. The question of excision *versus* amputation is not discussed. He throws no light on the question of growth of the bone after exsection has been performed. Partial operations on the joint are advocated, but details of the signs and symptoms which indicate this mode of operating are not given.

The value of extension and the mode of making it are here as elsewhere in the lectures ably explained. However, we are not aware that Dr. Sayre's particular apparatus for making extension at the knee is more than exceptionally in use in this country. Trials of it were made after Dr. Sayre's visit and lectures in London in 1871, but the instruments did not come into general use. The principle of it is most admirable, viz., that of enabling the patient to go out and move about in fresh air, whilst the limb is fixed and extended. The same remarks apply to Dr. Sayre's splints for the treatment of hip-joint disease before and after operation. It is unnecessary to particularise them, for they are now no novelties to the public. Modern text-books on surgery describe them. His advice on the general treatment is sound and good, and that repeated under the head of disease of the hip-joint is especially good.

We looked for more details with regard to the cases in which exsection of the joint should be resorted to. 'If,' he says, 'we can satisfy ourselves that the articular surfaces have become ulcerated, the cartilages disintegrated, and the bones eroded, which is indicated by the presence of a crepitus peculiar to itself, we consider exsection of the joint not only justifiable but in most instances absolutely essential.' And, in another place, 'If, in spite of treatment, the discharge does not diminish but rather increases; if symptoms of progressive caries develop in the part, if the general health is daily becoming undermined, and there are no symptoms indicating repair, the only justifiable treatment left for the surgeon is exsection of the joint.'

In reviewing the history of excision of the head of the femur, Dr. Sayre claims to have been the first surgeon to operate successfully in America. We need not quote the description of the operation as now practised by the author. He preserves the periosteum and all the muscles attached to it. He removes head, neck, and trochanters. He claims for this method the advantages of free exit for discharges, reproduction of the bone, and free mobility. In describing the operation he lays down some useful rules, to one of which we would direct especial attention. It is to the effect that the surgeon is not to attempt to thrust the head of the bone through the wound to expose it for the application of the saw. 'If too free luxation is made you will displace the periosteum too extensively, and the consequence will be a subsequent enfoliation of the bone thus uncovered.' The after-treatment by the 'wire-breeches' is admirable. At the end of this lecture on hip-disease, he adds a table of fifty-nine cases (all his cases) of exsection of the hip-joint, and a synopsis. Of the total, twenty are dead. Of these fatal cases, eight had recovered from the operation some time previous to death. Eight only out of the twenty died from the exhausting effects of hip-disease, without some intercurrent complication.

Disease of the wrist-joint is only illustrated by one case. Disease of the elbow-joint is not discussed at all.

The chapter following the lectures on Hip-joint Disease is devoted to the diseases which simulate hip-disease. He would lead us to suppose that 'diastasis' of the head of the femur is frequently mistaken for hip-disease in America. In the twenty-fifth lecture we come to Diseases of the Spine. He confidently attributes Pott's disease to a traumatic origin and not to struma. The symptoms and mode of examining patients are graphically described. The apparatuses for diseases of the spine are very ingenious. We are struck by that for disease of the cervical vertebrae, and wonder whether it is practicable and can always be worn. The plaster of Paris cuirass in Pott's disease is economical, simple and useful; and the mode of keeping up traction on the spinal column whilst the plaster jacket is setting, is novel, to say the least of it.

The following lecture is on what Sayre designates Rotary-lateral Curvature. This form of deformity he attributes to abnormal muscular contraction, and he teaches that the inspiratory muscles are the agents in producing the primary dorsal curves. He condemns all fixed apparatus in the treatment, and declares the principle to be the stretching of those muscles which have been inactive and relaxed, and the approximation of the origin and insertion of those muscles which should remain quiescent. These ends may be accomplished, he says, in various ways. He employs, amongst other things, an apparatus consisting of elastic bands and leather pads. This contrivance might be called the Sayre-Barwell. The spiral corset is another suitable mechanism.

He narrates one case of deformity from contraction of the latissimus dorsi muscle, which he successfully treated by division of the fibres of the muscle near the angle of the scapula.

Remarks on Ankylosis follow. Our attention is at once arrested by a positive statement that therapeutic ankylosis should be straight rather than angular. He declares as his reason that the straight ankylosis 'gives a more secure position, and one that is not liable to give the patient trouble at some future date.' The angular ankylosis is in his estimation very insecure, and may accidentally yield. Fibrous angular ankylosis should not be treated by gradual slow extension, but by immediate restoration to the normal position by manual force, combined with tenotomy and myotomy if necessary. The rules for tenotomy are the same for this condition as for club foot. The *brisement forcé* is to be made thoroughly and not timidly.

He lays down rules for the after-treatment, and these are in accordance with his previously enunciated views.

Nine cases are detailed and illustrated. The drawings are, like too many others scattered through the volume, far from being as good as they might be.

The subject of bony ankylosis may be said to be limited to a study of this affection at the hip, knee, and elbow-joints. The hip-joint occupies twenty-three out of twenty-seven pages, and sixteen of these are devoted to one case, in which he had procured what he called an artificial hip-joint, by cutting out an elliptical segment of the femur, above the trochanter minor. In a former case he had obtained a similar result from a similar operation; but, as our notice of these lectures has already extended to a great length, we must refer the reader to the volume itself for further particulars. This is one of those important subjects which need additional illustration.

The work abounds in original and interesting matter; but we cannot refrain from expressing a hope that, if a second edition be called for, the author will exercise his great ingenuity and practical ability in condensing the text and improving the illustrations.

A Treatise on the Science and Practice of Midwifery.

By W. S. PLAYFAIR, M.D., F.R.C.P., Professor of Obstetric Medicine in King's College. In 2 vols. London: Smith, Elder, and Co. 1876.

Considering the importance of the subject and the absurdly short space of time allotted to its study during the student's curriculum, we are surprised that more works on midwifery than there] are have not been published. We welcome the present volumes as calculated to supply a want both to the student and practitioner, which has long been felt.

It is too much the custom for students to neglect the study of midwifery and diseases of women, thinking that they will soon be able to pick up a knowledge of these in actual practice, forgetful that this may thus be gained at the cost of much serious discomfort, danger, and loss to the patients.

Many contributions from authors well able to treat of the subject have been published within the last few years, such as Barnes's 'Lectures on Obstetric Operations,' Clay's 'Handbook of Obstetric Surgery,' Lloyd Roberts's 'Practice of Midwifery,' and others; but Leishman's 'System of Midwifery' has for some years past been the only really systematic treatise that has appeared, until Dr. Playfair presented us with the volumes before us, which, we venture to predict, will not only add to his own fame, but also prove of material advantage to students and practitioners, and be the means of saving many valuable lives.

The present treatise has been divided into two volumes, adding, it may be, something to the expense, but contributing materially to its portability: no mean thing in these days of ponderous tomes. The type is good, and is copiously illustrated by, for the most part, well executed plates, which facilitate much the explanation given in the text, though we trust in subsequent editions to see some improvement in these. Fig. 152, on page 183, gives but a very feeble idea of what should be the 'forceps in position;' they would inevitably snip off the head at the very first efforts at traction.

The plan of marginal notes is one to be commended. They facilitate reference, and serve to impress upon the mind the more important divisions of the subject.

It would be well in the next edition, to add an index to the first volume, as also to make the present index more copious.

The author has divided his subject into five parts: Anatomy and Physiology; Pregnancy; Labour; Obstetric Operations; and the Puerperal State. These again are subdivided into chapters. By this means, much needless repetition is avoided, and precision and accuracy encouraged.

The Anatomy and Physiology is ample, without being too diffuse, for a work of this nature. The illustrations are well selected and clearly drawn. The information conveyed is trustworthy, and, for the most part, up to date. Where any question is still *sub judice*, the author gives the opinion of others, and his reasons for inclining to one or other view, without entering too much into controversy. It would have been well had Williams's views on the

menstrual decidua been referred to, in place of the assertion that no exfoliation of the uterine mucous membrane ordinarily takes place.

The second part is devoted to Pregnancy in all its various phases. The chapters are replete with information, and include nearly everything that could possibly be expected, the subject being studied in its anatomical and physiological, pathological, and medico-legal relations.

The chapter treating of Superfoetation, Extra-uterine Foetation, and Missed Labour, will prove of interest to all. The varieties of extra-uterine pregnancy, and the mode of dealing with these, are given at length. The conclusions of the author vary, however, somewhat from those of Dr. Parry, more especially as regards aspirating the cyst in the early stages, which, as far as we have had an opportunity of judging, is attended by more risk than is supposed.

The Mechanism of Delivery, forming, as it does, the basis of all scientific assistance during parturition, is scarcely as clearly explained or illustrated as could have been desired. Fig. 88, on page 309, vol. i., by no means represents, as asserted, the attitude of the child in the first position; nor are the other illustrations as practical and explanatory of the text as they might be. We doubt the utility of attempting to describe the levelling or adjusting movement as the third stage; it complicates rather than simplifies matters; and, as this division of the subject is always a difficult one for the student to understand thoroughly, it cannot be made too simple.

The diagnosis of shoulder-presentations by external abdominal manipulation, together with the fact of being able comparatively easily to alter the position of the foetus, and thus avoid the necessity of resorting to the more serious form of version, is very properly strongly insisted upon, and cannot be too generally known.

The ordinary process of parturition should be a purely physiological one, and not, as too frequently happens, a pathological one. If the rising generation would only learn to appreciate how many of the so-called deplorable 'accidents' of labour might be avoided by a little forethought and methodical examination of patients, we should be enabled to diminish the mortality from childbirth to a very considerable extent. Not only does this apply to the maternal, but also to the foetal mortality. The timely application of forceps, where some disproportion between the size of the foetal head and the capacity of the pelvis exists, or where the expulsive pains are inadequate, determines the birth of a living child and lessens materially the risk of *post partum* hæmorrhage as well as that of septicæmia.

We are beginning now to understand the fallacious reasoning of those who, having collected statistics from every conceivable source, authentic or otherwise, tell us that the application of forceps is a dangerous innovation, and point to the mortality occurring in such cases; the truth being that so many mothers as well as children were lost because forceps were not applied earlier in the labour, instead of in consequence of their application.

The observations as to the influence of chloral in the early stage of labour, more especially in highly nervous and sensitive primiparae, we would commend to the attention of accoucheurs. Much unnecessary suffering may thus be prevented, and parturition also facilitated.

The employment of ergot very rarely indeed before

delivery, and the regular administration of a full dose after, as advised by the author, is one to be commended; hæmorrhage is thus frequently prevented, and the risk of after-pains and septicæmia also lessened. The plan of expulsion of the placenta by pressure over the fundus uteri, after waiting a reasonable time for the uterus to recover itself a little, is one that should invariably be followed in place of the method still pursued by many, viz., traction on the cord.

The chapter on Deformities of the Pelvis is eminently practical. His suggestion for estimating the amount of deformity and the relative merits of resorting to forceps; turning and the induction of premature labour or abortion are clearly stated. In fact, the work is one of great merit, and we have much pleasure in recommending it as a reliable and trustworthy treatise on a much-neglected yet highly important branch of medicine.

Commentary on the British Pharmacopœia. By W. G. SMITH, M.D. London: 1875.

If our notice of this volume be somewhat delayed, we have at least had a longer time to form a judgment about it; and having used it freely during a summer course of lectures on *Materia Medica*, we are enabled to speak with much certainty as to its merits.

Dr. Walter Smith, whose name has been well known for some time past, as the author of the 'Reports on *Materia Medica*,' and other papers, in the *Dublin Journal of Medical Science*, has given us a very well arranged and very accurate commentary, bearing more especially upon the chemistry and pharmacy of the *Pharmacopœia*. It is less technical and less experimental than Attfield's treatise; but its chemistry is very modern, set in an interesting manner, and is sufficiently complete. It is no doubt meant to hit the happy mean between what is desired by a scientific student, and by a practitioner who is willing to refresh his botany and chemistry with a definite practical aim.

Under the different substances, which are treated in alphabetical order, we find paragraphs on origin, preparation, characters and tests, adulterations, use in pharmacy, and a general description of medicinal use. Sometimes the dose is mentioned, and if it be not so always, this is in accordance with the principle laid down of not reprinting the text of the '*Pharmacopœia*.' We find concise and clear explanations of processes, and a free use of chemical formulæ, and many ingenious hints and notions as to reactions, and as to dispensing.

A good deal of care has been given also to tabular arrangements of different kinds; a substance, for instance, with many compounds, as mercury or iron, has them placed in 'genealogical tables,' according to their order of formation; and the official preparations are classed thus under mercury into 1, metallic; 2, oxides; 3, haloid salts; 4, oxy-salts; whilst mercuric and mercurous salts are explained and contrasted in parallel columns, and iron compounds similarly.

Again, the varieties of aloes, and the properties of creasote and carbolic acid, are well contrasted; whilst the constituents of opium, and the kinds of rhubarb, are other illustrations of the same idea. The list of opium-preparations is not complete; we miss the powder, the extract, and the suppositories with lead.

Some of the more difficult explanations of modern chemistry are required for the acids, the ethers, and

the alcohols; and in these we think Dr. Smith has been quite successful, but we prefer to choose for brief extract a few of the pharmaceutical points.

'*Acacia Gummi*.—The white precipitate with acetate of lead consists of gummate of lead (Pb_3O_5 , $3\text{C}_6\text{H}_{10}\text{O}_8$), and is characteristic of true gums; it serves also to distinguish the acetate from the sub-acetate of lead, as the former will not precipitate with pure mucilage.

'From the researches of M. Frémy, it appears that gum is essentially a combination of gummic or arabic acid with lime; or rather it is a mixture of the gummates of potassium, calcium, and magnesium. The iodine test will detect the addition of starch, but it is necessary to allow the hot solution to cool, as the blue colour of the iodide is permanently discharged at a boiling temperature.

'Gum is incompatible with alcohol or rectified spirit which precipitates it from its aqueous solution, and tinctura ferri perchloridi forms a jelly with mucilage, though not with dextrin.'

'The three monobasic organic acids, viz. acetic, benzoic, and carbolic, each give a characteristic reaction with ferric chloride; acetic acid, a blood-red solution, decomposed on boiling; benzoic, a bulky reddish-brown precipitate; and carbolic acid, with the *liquor*, a violet-blue colour.'

'The stratified appearance of white arsenic is due to its capacity of existing in both a transparent and an opaque state; when recently sublimed, it is vitreous, but when kept for some time becomes opaque, and as the change proceeds from the surface to the centre, a large mass is often found translucent internally.'

Under arsenic, we have an instance of an occasional defect which occurs in the construction of sentences, e.g.: 'The best signs of arsenic decidedly affecting the system are either gastric irritation and purging, or perhaps, *better still*, redness of the conjunctiva and lower eyelids, attended with itching, and possibly some oedema.' Such a sentence might be changed for the better in the next edition. And again, 'Pure hydrocyanic acid possesses *tremendous* energy.'

Phosphorus is a subject that would have borne more consideration, especially as to suitable forms for administration. We learn, however, that 'Fenian fire' was a solution of it in bisulphide of carbon, which information may serve to impress the knowledge of its best solvent. Phosphorus may be easily granulated by placing it in a stoppered bottle with proof spirit, immersing in warm water, and shaking till cold.

Under pepsin, the author remarks that many specimens sold are worthless, but does not give what we think an evident explanation—that *all* pepsines deteriorate by age; the mere keeping will spoil almost, if not quite all kinds, independently of adulterations. Liebreich's essence ought to be mentioned as amongst the best, and superior to any of the powders, unless they are very recently prepared.

There are many interesting derivations and etymologies interspersed; and, although we cannot quite agree with all of them, we must acknowledge room for two opinions on such points. For instance, we think *λῆδανον* a better derivation for laudanum than the old 'laude dignum.' But apart from minor criticisms, we may conclude with saying that Dr. Walter Smith has well put together a great deal of useful information in a very readable form, and that of his many facts and formulæ there is not one with which we are prepared to find fault.

Nice Médical; Climatologie, Médecine Pratique, Hygiène, No. 1. Nice, Octobre 10, 1876.

We welcome the appearance of this journal, and wish it every success. It proposes to accomplish a very important object, and if it succeed in doing so we shall be much obliged to its projectors.

Northern Europe and Great Britain send their thousands every winter to the south of Europe for the most varied affections, although pulmonary ones greatly predominate in number. Physicians until of late years have had a very imperfect notion of the climates to which they send their patients; and if they now know much more on this head than they used to do, still they have a very incomplete knowledge of the history of their patients after they have sent them to the south. Some physicians have indeed endeavoured to trace the progress of their patients' cases, but they can often learn little more of them than that they left them in a certain condition, and returned in a certain condition. We have no full histories of the action of these southern climates on the diseases of our patients. When physicians resident in one station do write monographs about them, their writings are rarely sufficiently discriminative. They are too much devoted to the laudation of their own stations, or of some particular favourite corners of their station. We seldom get clinical histories from resident physicians, and there is a sort of uniformity in the way in which every man tries to write up his own resort that is very wearisome, and that imparts no real information.

We hope that a journal like the one now projected will give us variety of opinions from different medical men, as collision of ideas helps greatly to elicit the truth; that it will not be confined to Nice and its immediate neighbourhood, but take a catholic view of southern health resorts. Even the little journal which has been carried on with much spirit at Dax—*Les Thermes de Dax*—if not one of much pretension, is useful in drawing attention to that corner of France, and in enabling us to compare the climate of the shores of the Mediterranean with that of the south-west of France, and in making the contrast of the two more marked.

The editor of the Nice journal informs us that at least 50,000 strangers visit Nice every winter, and that the field for observation is very ample; while the cases being less exclusively pulmonary ones than at some neighbouring stations, are more varied in their nature. The journal is intended to give an account of the proceedings of the Society of Climatology of Nice, which was established only a few months ago. Instead of the ten or twelve doctors of whom Nice boasted in Smollett's time, it has now nearly one hundred, so that the society should not want for members.

The present number contains an interesting article on the progressive increase in the number of births at Nice, showing at once the prosperity and healthiness of the place. It is to be continued in the next number.

Another article is devoted to the tonic and vivifying effects of the climate of Nice, and shows that it is particularly suited for childhood, and especially for old age; prolonging the latter, and making it more easy and agreeable. An account will be given of the various appliances in aid of the climate which Nice offers, and in this number some account is given of the Turkish baths. Full meteorological returns are to be furnished regularly.

But the articles are not all strictly devoted to Nice. There is one on the treatment of rheumatism with salicylic acid, and another on the pulse and temperature in cancer; also an instructive one on the abuse of injections of morphia.

If we would venture to give a hint to the editor respecting the portion of the journal devoted to climatology, we would say that perhaps the articles are inclined to run into generalities, while we should prefer seeing more details of individual cases. We hope also that the sanitary condition and drainage of Nice will not be overlooked.

NEW INVENTIONS.

THE PNEUMATIC INDIA-RUBBER VENTILATING COAT.

The medical profession have, as a body, unreservedly accepted the axiom that 'Prevention is better than cure.' The efforts of our most eminent physicians are now directed to the prevention of mental diseases by a healthy amount of mental and physical exercise, and to the prevention of bodily disease by attention to hygienic surroundings, pure air, pure water, wholesome food, and suitable clothing. Following in this sensible track, our manufacturers, never backward in taking a practical hint, hasten to apply the latest discoveries of science to the production of wares embodying the hygienic requisites appertaining to their special class of manufacture. In this moist climate of ours nothing is more indispensable to the medical practitioner, especially to the large class engaged in country practice, than a thoroughly waterproof coat. Many of us, doubtless, can recollect the ugly, malodorous, sticky garment which went under that appellation but a few years since. Not only, however, was the external appearance of the India-rubber coat unsightly in the extreme, but its very merit, the keeping out of wet, became a serious danger, since it also prevented all evaporation of the perspiration, which consequently became condensed on the skin, clogging up the pores, producing a chilly, clammy sensation, and frequently inducing rheumatic pains on the unfortunate wearer, who was thus placed between the Scylla of a good wetting and the Charybdis of a rheumatic attack. But in this, as in so many other matters of the hygiene of daily life, great improvements have been made. The ugly black sack has given place to a neat garment undistinguishable from the ordinary great-coat; and what is of really more serious import, ingenious appliances have been invented by busy brains to remedy the unhealthy effects of impermeable India-rubber outer garments. Of these, at once the newest and most effective has been brought under our notice by Messrs. C. W. Meiter and Co., of Gracechurch Street, who manufacture a variety of waterproof coats and cloaks. By the insertion of tubes in a loose lining, a space sufficient for the passage of air is created through the upper part of these garments; and the only other part where heat and moisture are engendered by wear, namely, the armpits, is ventilated by eyeletted tubes. By these simple contrivances all the inconveniences and unhealthy influences of ordinary India-rubber coats are completely obviated, and the wearer ensures to himself complete protection from wet, with perfect comfort and healthfulness.

THE PATENT POCKET INHALER.

This inhaler received the precursory title of 'Aleximorhygiastikon,' or 'the death-repelling, health-restoring, very simple and portable instrument,' but 'will be known hereafter' by the less ambitious title which heads this notice. We think, however, that the proprietors have done wisely in altering the name of the instrument to its present intelligible form. It consists of a small glass or metal tube, open at both ends, and containing in the centre some blotting-paper, for the reception of the medicated fluid, which at present is limited to carbolate of iodine. The proprietor claims for his inhaler the following advantages. 1. It is cheap, simple and efficient. 2. It admits the use of all volatile remedial fluids, in a concentrated form, without dilution. 3. It has a certain and unchanging area of exhaling surface. 4. It has a definite supply of air, which is in no danger of being varied. 5. It ensures nearly an equal rate of evaporation during inhalation. 6. It may be carried in the pocket and used at pleasure at all times and under all circumstances. The disadvantage of it consists in the fact that only those remedies can be used which are volatile at the ordinary temperature of the atmosphere. The proprietor of the 'patent pocket inhaler' is Mr. Austin, 7, High Street, Bloomsbury.

BRETT'S EAU-DE-VIE.

The only certain test for the purity of distilled spirits, namely, skilled chemical analysis, has been applied with very satisfactory results to Messrs. Brett's British manufactured Eau-de-Vie. We have now before us an analysis of this brandy made by Mr. Wanklyn, in which, amongst other technical details, with which we need not trouble our readers, he certifies that it contains 38.1 per cent. (by weight) of absolute alcohol, and that it is devoid of fusel oil. As a clean spirit of proper strength and purity, Brett's Eau-de-Vie may therefore be safely recommended to the profession and the public for medicinal and dietetic purposes. Much foreign brandy is sold, which is by no means free from the unwholesome constituents above named, nor from other well-known means of adulteration. As a substitute for these low-priced so-called Cognac brandies, Brett's Eau-de-Vie is valuable, since it fulfils all the purposes for which the administration of alcohol in that form is sometimes necessary, without the slightest danger of counteracting the beneficial influences of the stimulant by any unwholesome sophistications.

A NEW FOOD.

Semolina as a food for infants has not hitherto received the same amount of attention as arrowroot, tapioca, sago, and the various kinds of corn-flours. Yet from the large proportion of nitrogenous matter contained in it, it is specially adapted for the purpose and its peculiar richness in nitrogens has been skilfully utilised in a new preparation of semolina, manufactured by G. P. Bottasso, jun., Marseilles. The Semolina Bottasso has been submitted to searching chemical analysis by a well-known expert, Mr. Wigner, with the result of showing that it contains nearly 10 per cent. of flesh formers, which is taken by the manufacturers as a warrant that the semolina may be prepared without milk. Such a preparation for the reasons already mentioned might be more nutritious than the ordinary farinaceous infant's

foods, but to ensure both palatableness and nutritiveness the addition of a proportion of milk is desirable. As a light food for invalids and for the preparation of articles of food in the way of puddings, custards, etc., this semolina is both agreeable and nutritious.

ARTIFICIAL AERATED MINERAL WATERS.

Some samples of mineral waters and aerated drinks, manufactured by Mr. Hay, of Hull, have been submitted to us for trial. A careful examination has convinced us that they are very superior articles of their class. The potass, lithia, and soda-waters contain the proper amount of the mineral ingredient, are well aerated, and the water whence they are manufactured is pure. The lemonade and ginger beer are of a very superior quality and flavour to the drinks frequently sold under those names. Mr. Hay has bestowed much skill and care on their manufacture, and with very satisfactory results.

RECENT FRENCH BOOKS.

Published by Octave Doin.

- Des lésions du fœtus dans les présentations spontanées de l'extrémité pelvienne et dans la version, par le docteur Ducourneau, in-8 de 109 pages. Prix : 3 fr.
 Recherches cliniques et expérimentales sur l'action des eaux sulfureuses d'Eaux-Bonnes, par le docteur Andral, in-8 de 51 pages avec 4 tableaux. Prix : 2 fr.
 Réflexions sur la pneumonie et sur son traitement à propos d'une épidémie de bronchite et broncho-pneumonie, par le docteur Dauvergne père, in-8 de 29 pages. Prix : 1 fr.
 Sur les propriétés toniques de la glycérine, par les docteurs Dujardin-Beaumetz et Audigé, in-8 de 15 pages. Prix : 50 c.
 Sur les propriétés physiologiques et thérapeutiques des sels de cicutine et en particulier du bromhydrate de cicutine, par le docteur Dujardin-Beaumetz, in-8 de 15 pages. Prix : 50 c.
 Clinique odontologique du docteur Magitot. De la variété rotation sur l'axe et de son traitement par la luxation immédiate. Leçons et observations recueillies par le docteur Pietkiewicz, in-8 de 23 pages, avec 16 figures dans le texte. Prix : 1 fr.

Published at the Office of the 'Progrès Médical.'

- Réformes à apporter dans l'enseignement pratique de l'anatomie. Par le docteur Farabeuf, in-8 de 28 pages.
 Des propriétés physiologiques du Bromure de Camphre et de ses usages thérapeutiques, par le docteur L. Pathault, in-8 de 48 pages. Prix : 1 fr. 50.

Published by V. A. Delahaye & Co.

- De la péritonite idiopathique aiguë des enfants, de sa terminaison par suppuration et par évacuation du pus à travers l'ombilic, par le docteur Gauderon, in-8. Prix : 2 fr. 50.
 Contribution à l'étude du lymphadénome, par le docteur Darasse, in-8. Prix : 2 fr.
 Du traitement topique de l'endométrite à l'aide du graphidomètre, ou pinceau utérin, par le docteur Rénier (Saint-Augers), in-8. Prix : 50 c.
 Contribution à l'étude du tétanos, étiologie, température et traitement par le chloral, par le docteur Chopard, in-8. Prix : 2 fr. 50.
 Leçons sur les maladies du système nerveux, faites à la Salpêtrière, par le docteur J.-M. Charcot, recueillies par Bourneville. Tome 1er : Troubles trophiques; Paralyse agitante; Sclérose en plaques; Hystéro-épilepsie, etc. 2e édition. Vol. in-8 de 428 pages avec 27 figures dans le texte, 9 planches en chromolithographie et une eau-forte. Prix : 13 fr.

Published by J.-B. Baillière & Sons.

- Manuel pratique des maladies de l'enfance, par M. A. D'Espine, professeur de pathologie interne à l'université de Genève, et M. Picot, médecin du prieuré à Genève, in-8 de 599 pages. Prix : 6 fr.

MISCELLANY.

PROFESSOR MEYNERT of Vienna, a few days ago, accidentally slipped down the stairs of his house, and broke both bones of one leg near the ankle-joint.

NORTH LONDON MEDICAL SOCIETY.—The following officers have been appointed for the ensuing year: *President*, Thomas Stretch Dowse, M.D.; *Vice-President*, George Henty, M.D.; *Treasurer*, Robert Hilliard, M.D.; *Secretary*, W. H. Kesteven, M.R.C.S.

TRANSATLANTIC LIBERALITY.—It is said that the College of Physicians of Philadelphia has purchased the extensive collection of preparations illustrative of the anatomy and pathology of the organ of hearing, sent to the International Exhibition by Professor Politzer of Vienna.

DRUGGISTS IN FRANCE.—There exist in France 6,210 druggists' shops, of which 2,121 are of the first, and 4,089 of the second class. In 1866 the total number was only 5,803. Calculating the population of France, this gives one druggist to every 10,000 inhabitants.

A NEW APPLICATION OF SCIENCE.—Dr. Janssen is devising an automatic photographic revolver, which will take a photograph every hour from sunrise to sunset all the year round. Only those taken when the sky is free from clouds will be useful for recording sun-spots, but the rest will be used for meteorological purposes.

THE Manchester papers announce that Mrs. Crace Calvert has presented to Owens College the sum of 700*l.* for the foundation of a scholarship in chemistry, in memory of her late husband, Dr. Crace Calvert, F.R.S. The scholarship will be of the annual value of 25*l.*, and will be competed for by members of the evening classes.

To fill the vacancy in the chair of surgery in the University of Heidelberg, caused by the death of Professor Simon, an unanimous invitation on the part of the professors has been sent to Dr. Czerny, who has for some time filled the analogous chair in Freiburg. Dr. Czerny was formerly an able assistant of Professor Billroth of Vienna.

THE Medical and Surgical Society of Bordeaux offers a prize of 1,000 francs, to be awarded at the end of 1879, for an essay on 'The Microscopical Study of Human Blood, fresh and dry, in the foetus and in the adult, compared with that of other mammalia, in a medico-legal point of view.' The essays are to be written in French or in Latin, and sent to M. Donaud, Secretary of the society, before August 31, 1879.—The Medical Society of Toulouse offers two prizes of 300 francs each for essays on the following subjects. For 1877: 'The Mind in Disease; its physical, chemical, or microscopical characters; the analytical proceedings employed in order to detect these changes.' For 1878: 'What are the motives which, in late years, have led to the abandonment of blood-letting in the treatment of most diseases? Is the tendency to substitute tonics for antiphlogistics justified?'

MEDICAL STUDENTS, 1876.—The following is a list of the number of students of medicine registered at the Royal College of Surgeons of England this session from the metropolitan schools, distinguishing the new entries for the session. It will be seen that the number of new students is large, especially at the great city hospitals: 1. St. Bartholomew's, 374, including 131 new entries; 2. Guy's, 317, including 95 new entries; 3. University College, 279, including 79 new entries; 4. St. Thomas's, 177, including 43 new entries; 5. St. George's, 136, including 33 new entries; 6. London, 123, including 35 new entries; 7. King's College, 105, including 28 new entries; 8. Middlesex, 101, including 38 new entries; 9. St. Mary's, 82, including 26 new entries; 10. Charing Cross, 70, including 29 new entries; 11. Westminster, 28, including 9 new entries. The gross number registered amounts to 1,793, including 546 new entries, distributed in the follow-

ing numerical order: 1. St. Bartholomew's, 131; 2. Guy's, 95; 3. University College, 79; 4. St. Thomas's, 43; 5. Middlesex, 38; 6. London, 35; 7. St. George's, 33; 8. Charing Cross, 29; 9. King's College, 28; 10. St. Mary's, 26; 11. Westminster, 9. The above includes dental students.

M. LECLANCHÉ has just constructed a new galvanic battery, which the *Annales Industrielles* thinks likely to render great service both in manufactures and in scientific research. The original oxide of manganese battery by the same inventor consists of a porous jar filled with pyrolusite, in which is contained the carbon forming the positive pole. This jar is immersed in a solution of sal-ammoniac in contact with zinc. M. Leclanché has, however, introduced several improvements into this battery. He has superseded the porous jar by conglomerating the oxide of manganese, mixed in nearly equal parts with carbon, but with the addition of a small quantity—5 per cent.—of resin for the purpose of giving consistency to the mass. These three substances, properly pulverised and intimately mixed, are conglomerated under a considerable pressure, and at a temperature of about 100° Cent.—212° Fahr.—into a solid cylinder, which serves at the same time as a porous diaphragm and a positive electrode. But here a difficulty occurred. Under the influence of the current, an almost insoluble oxychlorate of zinc was formed, which was deposited in a crystalline form in the pores of the electrode, and considerably diminished its conductivity, so that the internal resistance of the battery increased very rapidly, occasioning considerable inconvenience, especially when used for telegraphic purposes. M. Leclanché has now got rid of the difficulty by inserting in the centre of the carbon and manganese electrode, while being moulded, a small cylinder of bisulphate of soda. This acid salt prevents the formation of the oxychlorate of zinc; and the battery preserves its regularity for more than a year without the necessity for renewing the water of the saline solution. It offers a much slighter resistance than other batteries, and gives out a considerable quantity of electricity. A single element of small size, presented by M. du Moncel to the Académie, immediately caused a platinum wire connecting its two poles to become red hot.

SPIRITUALISM AMONG THE MAORIS.—According to Lord Pembroke, in 'Old New Zealand,' the priests would, and do to this hour, undertake to call up the spirit of any dead person if paid for the same. A young chief had been killed in battle, and at the request of his nearest friends a priest had promised on a certain night to call up his spirit to speak to them, and answer certain questions they might put. The appointed time came, and at night we all met. Fires were lit, which gave an uncertain flickering light. The priest retired to the darkest corner. The door of the room was shut; the fire had burned down, leaving nothing but glowing charcoal. The light was little better than darkness, and the part of the room in which the priest sat was in perfect darkness. Suddenly, without the slightest warning, a voice came out of the darkness:—'Salutation! salutation! to you all. Salutation! salutation! to you my tribe-family, I salute you! friends, I salute you!' At last the brother spoke, 'How is it with you; is it well with you in that country?' The answer came (the voice all through, it should be remembered, was not the voice of the priest, but a strange melancholy sound like the sound of the wind blowing into a hollow vessel), 'It is well with me. My place is a good place.' The spirit spoke again, 'Give my large tame pig to the priest, and my double gun.' A 'test question' was then applied to the spirit which only deigned the reply, 'Farewell, O tribe! farewell, my family, I go.' Here a general and impressive cry of 'Farewell' arose from every one. 'Farewell,' again cried the spirit, from deep beneath the ground. 'Farewell,' again, from high in the air. 'Farewell,' once more, came moaning through the distant darkness of the night. 'Farewell.' I was for a moment stunned. The deception was perfect.

A MEDICAL ASSOCIATION IN NEW ZEALAND.—An endeavour is being made to combine the members of the profession in New Zealand into an Association having a similar organisation and objects to those of the British Medical Association. The promoter of the scheme is Mr. Millen Coughtrey, who was formerly attached to the Liverpool School of Medicine, and is now Professor of Anatomy in the University of Otago.

HORNED MEN IN AFRICA.—At the recent meeting of the British Association in Glasgow, Captain Cameron read a portion of a paper, written by Captain J. S. Hay, relating to a strange malformation in the males of a tribe of people he had visited in the district of Akem, in West Africa. The extract was as follows. 'Two diagrams which are laid before you depict to the best of my ability, and will at least convey some idea of, a malformation which is, I believe, peculiar to this tribe. I have at least noticed it in no other. My statement on this subject in an earlier paper, read before the Geographical Society in London last June, seemed to awaken considerable interest and astonishment (not unmingled, perhaps, with some incredulity), and attracted the notice and attention of such learned authorities as Professor Busk, Professor Huxley, and Mr. Francis Galton. With the last-named gentleman I had some correspondence on the matter, and I have endeavoured, in answer to the questions he then put to me, to amplify and elucidate a little further my original remarks on this curious point. The malformation in question is confined to the male sex, and consists in a protuberance or enlargement of the cheek-bones under the eyes, which take the form of horns on each side of the nose. This malformation begins in childhood, but is not, so far as I am aware, hereditary. It presents no appearance of being a diseased structure, nor is it a raised cicatrix after the fashion adopted by many African tribes. On the contrary, I have seen children with this peculiarity of structure whose parents were doing their utmost (though ineffectually) to stop it by medicines and applications. In the meantime to set all speculation and conjecture at rest, and to corroborate a statement that doubtless may appear extraordinary, I have lost no time in writing to a missionary, a native of the country, to procure me, if possible, skulls in which the phenomenon appears, and as soon as these arrive it is my intention to exhibit them in connection with a paper on the subject, which I propose to read at the Anthropological Institute in London.'

LUNACY IN SCOTLAND.—The eighteenth annual report of the Lunacy Commissioners for Scotland is issued. It shows that the total number of lunatics in Scotland, of whom the Commissioners had official cognisance, on January 1, 1875, was 8,225, of whom, 3,850 were males, and 4,375 females. Of these, 5,002 were in royal and district asylums, 226 in private asylums, 1,472 in private dwellings, and the remainder in parochial asylums and poorhouses, with the exception of 49 in the lunatic department of the Perth General Prison, and 143 in training schools; 6,700 of them are maintained by parochial rates, 49 by the State, and the remainder from private sources. Of the unreported insane, maintained by their friends in private dwellings, the Commissioners have no certain knowledge. The number of registered lunatics when the Commissioners first entered on their functions, namely, in January, 1858, was 5,823, so that there is shown in the seventeen years an increase in lunatics of 2,402; but this increase may in part be due to more lunatics in proportion to the total number having come under official cognisance. In 1858, the number of lunatics per 100,000 of population, was 191; in 1875, it was 230, there having been a gradual increase in the proportion during the intervening years. This proportion of lunatics to population is lowest in the country of Renfrew, where, in 1875, the figure was as low as 126 per 100,000; and highest in Kinross, with 375 lunatics per 100,000 of the population. The total number admitted to asylums during the year 1875 was 2,191, being 490 private, and 1,701 paupers. During the same period,

974 were discharged recovered; 397 removed, not recovered; and 561 died; the total number removed being thus, 1,932—of whom 461 were private, and 1,471 paupers. The average rate of recovery is highest in parochial asylums. This, the Commissioners say, is probably explained by the fact that the patients received into these institutions comprise a greater proportion of persons labouring under the ephemeral forms of insanity than those received into public and private asylums. Of the unrecovered patients removed, 21 escaped. The total number of escapes during the year was 257; of whom 161 were brought back within twenty-four hours, 60 within a week, and 15 after a week. There were six cases of suicide. The total expenditure for pauper lunatics in Scotland was, for the year ending May 14, 1875, 157,806*l.*, being nearly double the amount expended in 1858. The amount paid from imperial sources towards the support of these lunatics was 59,483*l.*, so that the direct burthen on the payers of parochial rates was 98,323*l.*

THE MILITARY HOSPITAL AT NISH.—The correspondent of the *Standard* thus describes this hospital. 'Although the hospital, like all oriental buildings, is especially built to gain as great a current of air as possible—windows and doors are always directly opposite each other—yet a pestilential atmosphere prevailed in the rooms, as the wounded are so crowded that sometimes a hundred were in one room where there was not really space for fifty. In general, the number of cuts and bayonet thrusts was small, that of the gunshot wounds very great; in some rooms a number of the men had been shot in the back. The wounded arrive from the battle fields in a pitiable condition, the balls and splinters of bone have not been extracted, their wounds are only closed with *ferrum sesquichloratum solutum*, and for days the balls sometimes remain in them, causing the most dreadful incrustations to be formed. The rational treatment of the patients meets with many difficulties, especially, as already stated, from the want of space, of good air, and a greater number of skilful doctors and nurses; then, in the absence of proper syringes, the doctors are obliged to use little glass ones, and the cleansing of the wounds being thus only imperfectly performed most of them assume a dangerous character, and the mortality increases in an alarming manner. The operations are performed by a professor of surgery, who came from Constantinople for this purpose accompanied by a number of medical students, but he brought such an imperfect supply of instruments with him that every operation occasioned a great loss of blood. At last a young Viennese surgeon, Dr. Lichtenstein, proposed that the so-called Esmarch's knife should be used, and, as no other instrument of this kind was to be found, he placed his own at the disposition of the operator. Since then the loss of blood during the operations, and the number of those who die from them, have been less. By the side of these dark shadows there is also the bright side in the hospital; the view from every window is lovely, and has a wholesome effect psychologically on the patients; the food and attendance, considering the circumstances and ordinary habits of the Turks, excellent, and never did a doctor find more patient and obedient patients than the wounded Turks. They never complain, always have a smile for the doctor, and thank him for dressing their wounds or other assistance. Even from the dying, whose wide-open, staring eyes proclaim their approaching end, not a sigh is to be heard, and often their faces assume a grateful expression, or they give some friendly sign when the doctor approaches. A case of wonderful stoicism also came under my notice. An Arnaut had his thigh amputated, an operation which might well make even a doctor shudder. The breast of the French surgeon, Larrey, who undertook such an operation on the battle-field of Wagram, must, so a Prussian doctor said to me in 1866, have been like that of the first mariner in Horace's ode, encased in *as triplex*. The Arnaut took no narcotic, and did not distort a muscle during the operation.'

The London Medical Record.

Authors of Papers, Theses, &c., will assist in the preparation of summaries by our reporters, by forwarding separate copies of their works.

ON FUNCTIONAL SPASMS. BY S. WEIR MITCHELL, M.D., MEMBER OF THE NATIONAL ACADEMY OF SCIENCES.*

I should scarcely have thought it worth while to recall attention to the obscure subject of functional spasms and its near clinical relatives, were it not that, in some of the most annoying and seemingly hopeless cases, I have been able to give so much relief as to enable the sufferer to resume his place among the active. Yet, besides this, some of the forms of spasm which I shall describe under this name, are not as yet fully recognised, or are seen so rarely in every-day practice, as to be looked upon as mere curiosities, or as utterly beyond therapeutic help.

Duchenne de Boulogne, in the second edition of his great work on Electro-therapeutics, has given the name of functional spasm to 'an affection characterised by pathological contractions, painful or not, but manifested only during the exercise of certain voluntary or instinctive movements.' He gives first the classical illustration of the various forms of writers' cramp, and others in which the biceps and deltoid contracted painfully when the hand was used. Then he refers to the spastic disorders of shoemakers, tailors, etc., and to the case of a fencing-master, who had contractions of various muscles when employing them in the habitual acts of his business. A large number of such examples might be cited from this author and from others.

Putting aside these well-known instances, I desire to call attention to a class of cases which, although nearly related to those just mentioned, differ from them in several most important particulars. They consist of three distinct classes: 1. Those in which the functional activity of a muscle or set of muscles gives rise at times to an exaggeration of the motions involved naturally, and sometimes also to more or less spasmodic activity in remoter groups; 2. Those in which the functional action of one group results only in sudden and possibly in prolonged spasmodic acts, tonic or clonic, in remote groups of muscles not implicated in the original movement; 3. Those in which standing or walking occasions general and disorderly motions, affecting the limbs, trunk, and face, and giving rise to a general and uncontrollable spasm without loss of consciousness.

The first group is, to my mind, one of the most curious. The pure instances, that is, those in which a normal motion is liable to become excessive, are rare. Some cases of writers' cramp nearly fulfil the conditions; but here pain or sense of fatigue is often, nay usually, superadded, and the overaction is not merely excess, but involves incoordination

almost inevitably. I mean, therefore, that there exists a set of rare cases in which the motor act becomes suddenly exaggerated. The result may be temporary, as in the following history of a man who came under my care some years ago. He was engaged in the manufacture of watches, and had in it some work which required him to be constantly picking up and adjusting tiny screws. When I saw him, he had been thirty years at this labour. His general health was faultless; but within two years he had acquired a strange peculiarity which made it impossible to do any steady work. When I began to question him as to this matter, he said 'Let me show you,' and asked leave to pour out some sugar-coated pills which were in a phial on my table. He then began to pick them up, which he did easily. Then he said, 'These are too large,' and at last took a wooden match and broke it into small bits, which he put on the table. As he picked these up he stopped at the third one, and said, 'There it is, locked at last.' I found that the forefinger and thumb were, as he truly said, locked on the morsel of wood. I forced them open with great difficulty, and was surprised to find the spasm stronger than his normal power in the same parts. This locking took place ten or twelve times a day, and was apt to last from ten to thirty minutes. He would succeed usually in pulling out the imprisoned screw with a loop of twine, but its release did not end the spasm, and very often the screw cut his fingers. Of late, the trouble began to show itself in turning the pages of a book, when at times the finger and thumb would close with violence, and the page be torn. He made the interesting observation that the spasm came soon if he put himself in his habitual attitude when at work, but that it was long delayed if he stood when at his labour.

This was the best case I recall of pure spasmodic increase of a normal act. It involved no pain, and only at times caused slight tremor, as extreme muscular exertion is apt to do in many persons. The moment the spasm was over he could at once pick up a screw and continue to work. This man had a varied experience in treatment, to mention which in detail would be to name almost every potent drug at our disposal. I used several means to lessen the sensitiveness of the skin of the affected fingers, thinking it possible that the beginning of mischief lay there. Afterwards, at his earnest desire, I used various electrical treatment, in which in such cases I have little faith. All alike failed, and the record was much like that of writers' cramp. Nothing but rest aided him, and he finally left the city to reside on a farm in the country.

As we all know, many trades are liable to cramp of the over-used muscles, as in the hammer palsy described by Duchenne. The calf cramp of the turner in wood or metal. These are usually brief and painful. But sometimes they are of the nature of what I may call, as it is a truthfully descriptive phrase, lock-spasm, a permanent or lasting painless spasm, of which this is a good example.

A sawyer, aged about forty, temperate and healthy, was seized at the end of a long hot day's work with a sudden spasm of the biceps. The saw, drawn back to prepare for the downward motion, was arrested. He ceased work and went home. His wife said he had a 'cold stroke,' his doctor that he had a heat stroke, but at all events the biceps only gave way during the sleep of the night which followed. After the spasm had returned many times,

* *American Journal of the Medical Sciences*, Oct. 1876.

he came to me one morning with an attack in full force. After the first they came back at long intervals, but these soon grew less; and when I saw him the spasms took place once a day, rarely twice, nor could their length be predicted. The arm I saw was locked in the extreme of a spasm so violent that no effort I could make relaxed it, although I made efforts which it seemed to me might endanger the bones. On a second visit I walked with the patient to a grocer's near by, and there got the man to bend over so as to bring the forearm horizontal. Then I attached a scale-pan to the wrist by a broad band, while he stood bent with his other hand on a chair-seat. Then I weighted the scale-pan until, after it had held eighty pounds for five minutes, the arm began to extend, and at last suddenly gave way. This spasm did not return on removal of the weight, but I got no permanent therapeutic use out of the suggestion this gave me. The enormous amount of force generated to sustain eighty pounds at the end of a lever as disadvantageously situated in regard to its fulcrum and to its active mover as the forearm is in relation to its joint and to the biceps, suggests some interesting reflections. Yet the power here wasted is slight as compared with that evolved to sustain the years of spasm in some cases of hysteria.

In the case I have briefly related, I think that good was done by the use of the induction-current; one pole was put on the outside of the biceps below and one on the belly above, and the strongest endurable current was passed through it for two hours once a day, and whenever the spasm took place. After a time I also used hypodermic injections of atropia into the belly of the muscle, a treatment for spasm much employed with my colleagues, Drs. Morehouse, Keen, and myself, in 1862, while in charge of the U. S. A. Hospital for Diseases and Injuries of the Nervous System.* The same means are still in frequent use at the Philadelphia Infirmary for Nervous Diseases. These two means were, I think, of value, because the spasms became by degrees less, and after several months ceased; a very unusual result of treatment, if it was a result, in these forms of spasm.

The third case of tonic spasm which I shall place beside those already given, must owe what details I can give to my remembrance, as the notes are mislaid.

The sufferer was an officer in rugged health when shot through the forearm and arm at the same moment, and just as he was drawing his sword. He felt a shock, but was more conscious of the fact that he could not release his sword-hilt from his grasp. At last he took hold of the fingers with his left hand, and opened them. This is a not rare incident of arm-wounds, and had, I think, no near relation to what followed. The wounds partially divided both the median and musculo-spiral nerves, and he endured many months of torment with causalgia (burning pain) in the palm. At last he got well, and at the close of the war came to me for the trouble I shall now describe. At times, when holding anything in the grip of the right hand, he would have a sharp pain where the median divides in the palm, and instantly the flexors would violently close the hand. The spasm would endure for two or ten minutes, and then relax. I have seen his palm cut by the violence

with which the nails were driven into it. The initial pain left as the spasm began, and the spasm was not of itself painful. He believed that it was caused by pressure on a tender spot in the palm, but I never could cause it by direct pressure. The median branchings in the palm were certainly tender, and I therefore desired him to use the treatment by repeated blisters, which in the war and since I have found valuable in many local nerve-troubles. He used at last twelve blisters on the palm, with the result of ending, I think, altogether his annoying malady. I heard of him as well a year later.

In this last case there must have been a sensitised nerve-region, from which the morbid impulse started. It was really a case of reflex influence, and was sometimes amusing in its consequences, because the victim never knew when the grasp would shut relentlessly on what the hand held.

These cases are, I suspect, excessively rare, as are also those in which a normal muscular act causes remote associated movements. The most familiar case is that of the lifting of a palsied arm during the act of yawning.* Histrionic spasm of the face also offers some odd illustrations, as in the case of Miss Inman, given by Marshall Hall. Here voluntary drawing down of the right angle of the mouth caused at once spastic closure of the right eye. This very curious case began with general tonic spasm of the right side of the face. He quotes from a French journal a still more notable case. It is too briefly described as a ball-wound of the left side of the face. The wound healed easily, but whenever afterwards the man used the jaws in any way, to speak, to laugh, to chew, instantly the sublabial muscles passed into a state of violent spasm, producing the most hideous grimaces. The normal action of one muscular group evolved the abnormal response of another.

One of my own cases was as interesting. It belonged to the class of hypercineses, in which the spasms lie chiefly in the range of the spinal accessory and first cervical nerves.

R. L., aged forty-five, a plumber, previously in good health, was hurt in January, 1862, by the fall of a cake of ice, which struck him on the back of the head and knocked him down. He suffered only from stiffness in the muscles at the back of the neck. This never quite left him, and within three months his head was slowly drawn more and more to the left. Then the convulsions appeared, and at brief intervals he had horrible spasms in the trapezius, sterno-cleido-mastoid, tracheloid, and spinatus muscles. Every minute, at least, the head was jerked backwards and twisted to left, the shoulders drawn up, and a storm of rapid but energetic spasms swept over the facial muscles.

He improved very much while taking gelsemium and bromides in full doses, so that at last the abnormal actions above described became really trifling. I believe they came back the year after, but in the interval he had a form of trouble which was painful to see. Whenever he began to chew food, the submental muscles would jerk his mouth open, and so hold it until at last he would push it shut with his hand, and chew a little more before the spasm returned. When ready to swallow, his face presented a picture of terror. He would suddenly muster courage and swallow the contents of his mouth at a

* 'Gunshot Wounds and other Injuries of Nerves,' 1864, Mitchell, Morehouse, and Keen, p. 154.

* This act must have curious influence. I saw last year a case of slight strychnic poisoning, in which the act of yawning suspended the spasms.

gasp. Then instantly the jaw flew open, the head was drawn back and down on the left shoulder, the face was convulsed, sweat broke from his forehead, and the attack was at an end. Sometimes, if he could bolt his food very quickly, he escaped the consequences. In this and the last case the muscles involved are really part of the muscular apparatus for chewing, speaking, etc., but have only a subsidiary part; still they belong, as to their activities, to nerves other than the facial, and are in this sense remote.

I have since seen many cases of this form of spasm, and in nearly all the acts of laughing, talking, but, above all, chewing, seem to provoke the return of spasms. In one case the convulsive movement drew the head back, and bowed the spine, and passed off by a spasm of the gastrocnemial groups, so as to jerk him into a squatting posture.

These are hypercineses, in which the spasms, usually active with or without apparent cause, are also brought on or increased by the functional activity of other muscle groups, allied or remote.

I have seen also certain spasmodic cases in which all of the abnormal phenomena were related to the physiological act of walking—I might define them as being exaggerations of walking. I have seen this disorder in various forms.

My first case was a chubby, ruddy little boy, aged six, from Tennessee. I could find neither in his own nor his parents' history any cause for his disease, save that it came on slowly after measles. When asked to walk, he exhibited this strange set of symptoms. The left leg was sound and acted well. As he swung the right forward, and lifted the toes to avoid touching the ground, there was first a sudden spasm of the tibial and peroneal muscles, so that the tip of the foot was jerked up too high. Instantly it seemed to relax, and the foot came down, but, as it touched the ground, and the second physiological act of rising on the ball of the foot began, this became extreme and spasmodic. The lad was lifted abruptly, and, the spasm of the gastrocnemii continuing, the leg was jerked up backwards—a true string-halt. I had never seen this before, and was much interested. While at rest on his back he moved the foot at will without annoyance or spasm, nor could I by a blow, or pressure, or tickling of the sole, cause him to repeat the movement.

In July, 1875, I saw at my clinic a case somewhat like the last, but with some important differences, in a delicate looking girl, aged seven, with a good family history, and no cause to which I can trace her troubles of locomotion. She began to crawl at two years, and never walked till the fifth year, yet with this slowness to move there seemed to be no arrest of mental or moral development. The mother thought that she was gaining ground. When we stripped her, I found that she had all the foot-motions perfectly, save that of flexing the feet, which, when they got to a right angle with the leg, could move no further, the tendo Achillis refusing to yield. The other muscles above the knee were in that curious state which we find in some partial palsies in adults, and which Dr. Seguin has admirably described. It is a condition of rigidity which varies in degree in different cases. In this state, if you flex the leg on the thigh, the extensors, which should be passive, slowly, and, as it were, reluctantly, act and resist the flexion. If you extend the leg, the flexors act to resist in like fashion. Whatever motion be made, the opponent muscles contract, and every willed

movement becomes tardy and difficult, or, in bad cases, impossible. When an attempt is made at passive motion, the muscles do not resist in jerks, but smoothly and evenly, so that it seems as if you were bending a stiff hinge or a bar of soft metal. In fact, so striking is this analogy, that at my clinic this state has come to be briefly described as the 'lead-pipe leg.' In the present case it was not extreme in degree. Voluntary movement in walking curiously exaggerated the gastrocnemial spasm. Every time the foot came down the gastrocnemius muscles contracted violently, and so as to lift the child with a jerk on to the foot then in use. If the walk were rapid, she walked continuously in this position. If she moved slowly, the gastrocnemius only acted as she rose on the ball of the foot, the natural physiological act becoming excessive.

Here was then a slight but permanent tonic spasm of the calf-muscles, yielding easily under ether, with a temporary functional spasm alternating in each leg as she used it in walking. After some reflection, Dr. T. G. Morton cut the tendons of the calf-muscles on both feet; and, as a result, the muscles, in place of continuing to contract, relaxed, as the resistance ceased. The tendons were thus lengthened at least two inches, but ample power remained, and the walk was most satisfactorily improved.

The next case is yet more curious.

R.C., aged seventeen, a long, thin, sallow lad, from New Jersey, was brought to me in October, 1874. Healthy up to the age of nine, he had then measles, from which he recovered very slowly, and with marked feebleness of the legs. As time went on, the power to use them increased, but by degrees there came upon him a certain stiffness, which extremely embarrassed him in all his movements. At the time I saw him his legs were equally developed, except that just above the left knee the thigh-muscles were somewhat wasted. While in bed at rest the legs were quiet. When he stood up the spinal erectors became extremely rigid, and threw the back into a bow, while a strong effort of will was needed to keep the left leg quiet, and sometimes, the effort being insufficient, it was jerked upwards. When seated, he kept the leg still by crossing over it the more manageable right leg. When he walked, each leg in turn was jerked up by the gastrocnemii, so as to constitute a string-halt, which, as he was swayed to right or left, and bent back by the alternating activity of the spinal erectors, caused him to present a most curious appearance. For instance, on coming to a stand after rapid walking, the spine was bent forward, the belly thrust out, the legs bent, and the lad balancing on the ball of the right foot, with the left leg jerked up at a right angle.

At first I felt indisposed to attempt any treatment of this puzzling case. Various electrical treatment was tried and failed, such as induction currents to the antagonist muscles, or long-continued induction currents to weary the spasmodically acting muscles, and Remak's rapid alternatives.

A long series of atropia injections into the calf-muscles met with more success, and the action of these muscles became distinctly less powerful and less troublesome. Next I weakened the back muscles by a series of repeated cross sections at different levels; and finally I put on him an apparatus which limited the extent to which the over-active muscles could move the various parts of the limbs. I did not cure him, but I most certainly did remark-

ably better his condition, and enabled him to rise, stand, and walk with far less fatigue and effort.

The last two of the cases I have here given involve spasm or increased spasm in groups of muscles accustomed to act together in order to secure equilibrium when standing, or to aid in the movements of progression. The cases first given were also examples of voluntary action bringing on or increasing spasm elsewhere, but, save in the case of yawning, and the consentaneous arm-lifting which it causes in some hemiplegias, the muscles which contracted convulsively were not remote from those whose activity seemed to call them into morbid motion. But in the case which I shall now present, the most prominent feature was the fact that every or almost every voluntary motion caused extraordinary changes of or increase in the amount of the spasm, and this was the case whether the patient was prone or erect.

R.C., aged thirty-three, watch-case maker, married, had healthy children; no syphilis. His family history was bad; a sister, two aunts, and his mother had palsies in middle life; an uncle had epilepsy, and a cousin dementia. He was always nervous and excitable, used no spirits, smoked moderately, and was always well until the summer of 1865, when he was two days unconscious from sunstroke, and had ever since been made weak by the heat of summer. About two years ago, in the summer of 1874, he observed that while walking the legs felt weak, and he was obliged to stop, as if to regain power; after which the right leg would drag for a time. At the same time he began to have pain in the back of the neck and lumbar spine. These pains continued. In January, 1875, he noticed a slight but increasing tremour in the left arm, and in two or three months the strange condition which I shall try to describe.

When I first saw Mr. C. he was a healthy-looking man, of unusual intelligence, and marvellously patient under his great suffering. In sleep there was no movement; when he awoke, he was conscious of the left hand being rigidly closed. In a few moments it began to twitch, the fingers moving as do those of a violin-player. The slightest movement of any other limb, speaking, or eating—even if he were fed—caused the left arm to execute a constant motion of striking the bed or his side, the limb being the while extended. When he arose and walked, this action became more violent, and so much resembled the steady, rapid movement of a pendulum, that I spoke of it at once to my assistants as a case of what might be called, descriptively, *pendulum-spasms*. In fact, its rhythmic regularity was astonishing. Dr. Sinkler timed it, on one occasion, as 157; and on several others I found it always exactly 160. It was as accurate as the heart in its motion, but certain things always increased either the power or the number of the motions. Thus if he stood up, having been seated, the number did not alter, but the force of the blow on the thigh increased remarkably.

If, while standing, he elevated and extended the right hand and arm to the shoulder-level, instantly the rhythm mounted to 200; and when the right arm ceased to act, the number fell again speedily to 160.

When there was no pendulum-spasm, he could perform with the left arm any voluntary act not involving the hand, which itself never ceased to twitch; but while the swinging spasms lasted he

could execute no volitional act, and the effort to move the limb enormously increased the spasms.

Excitement and emotion, and all forms of electricity, added to the force of the motions, but voluntary movements of other limbs increased the number more than the force. Attempts at passive motion, as the effort to fully extend the partially flexed fingers, caused intense pain in the occiput, just as the effort to overcome rigid gastrocnemii in certain cases gives rise to pain in the dorsal spine. He had power to stop the spasms by certain manœuvres. If he seized the left hand with the right, and, flexing the left arm, held it, there was a kind of general spasm; the left hand for a moment seemed to struggle with increasing violence; he tottered; the face was convulsed; there was horrible pain in the back of the head. Then he gently released the left arm, which, save for a slight tremor or twitching of the unquiet fingers, remained at rest, and might not move in violent spasm for an hour or more, and was sometimes nearly still for twelve hours.

He avoided the use of one hand to stop the other, because of the great pain it caused in the head. When he stopped the hand with his leg, he had little head-pain, but it was altogether so unpleasant for him to check it that he rarely did so. When standing, if he wished to stop the pendulum-spasm, he threw the left leg back so as to trip the toe; the arm then fell in as it moved, and he brought the leg forward so as to catch the arm against the thigh, where its own spasm held it. Then there was a general convulsive moment of the entire body, and the limb was at rest.

When the arm was hanging quiet at his side, it began to move if he walked a few steps, or if he lifted the right arm, in which at times—especially after sudden arrest of the spasm—I noticed some large tremor.

In all of this strange set of symptoms there was no loss of consciousness, no anæsthesia, no ocular trouble or spasm, no aural defect. When he walked long or fast, the legs had some disposition to become rigid; but this was an inconstant feature.

There are several points of great interest about this notable case. No other is so good an illustration of the product of clonic spasm through remote voluntary activity. Also the mode of arrest is curious, and I should have added, in describing it, that a bystander can stop the spasms by securely holding the arm for a few moments, when the usual general contortions occur, and the limb ceases to move. Voluntary motions of remote parts—of any remote parts—set the spasms going. Forcible arrest of the spasmodic swing of the arm seems to cause a discharge of nerve-force from numerous nerve-centres, and so gives rise to a momentary generalised spasm. This last fact finds analogies in some spinal sclerosis, and in some clonic local spasms, the arrest of which occasions remote or morbid activities.

I saw, in the war, a soldier who had a constant *see-saw spasm* of the left foot, caused by a nerve wound of the sciatic. The flexors and extensors acted by turns, so as to keep the foot in constant motion. When I held it firmly, he was seized at once with a general left-lateral convulsion, in which the face moved but slightly, without ocular spasm or loss of consciousness, but with occipital pain. As soon as the foot was released, the other motions ceased. Sensibility was impaired from the peripheral lesion.

In the case of Col. P., described at p. 364 of my

book on 'Nerve-Injuries,' there was a continual irregular thrashing motion of an arm-stump, which ceased for a time, when the stump was exercised in voluntary movement, but which extended over a large region of the same side (right) with sense of discomfort in the head if an attempt were made to hold the agitated stump. These peculiarities seem to me worthy of note in cases so obscure, and the history of which has been thus far imperfect, because we are without *post mortem* results or interpretations.

There is yet another group of cases, happily most rare, in which, while the patient is at rest prone, or as in one case seated, no spasms exist; but when the upright posture is assumed, at once the patient is seized with general convulsive motions, which may or may not persist. Of such a disorder I have seen three cases.

The first and most singular was that of a journeyman tailor, about twenty-eight years old, a man of lean make, and very anæmic. He had been guilty of no excesses, and had not had syphilis. His secretions were normal, and his organs, to appearance, healthy. He had, however, worked hard in the cross-legged position which tailors assume, and had been constantly sewing late into the night. This was all that could be learned of his history.

When this man was seated or on his back, he could make every possible movement, slowly or as abruptly as he pleased. If he got up from his bed or a chair slowly and watchfully, and then stood still a moment, he could walk away as well as any one; but if he jumped up suddenly from the prone or the sitting posture, he was seized as by a spell with a convulsive attack, in which his head became giddy, but in which there did not seem to be the least loss of consciousness. As he made a sudden attempt to get up hastily, the right leg bent at the knee, the left was thrown over it, and grasped it in violent flexion. The body was twisted to the right, and the head also, while the right arm in extension was raised, and the left thrown outwards and backwards in extreme pronation. Then there was a general writhing of the whole frame, the face muscles twitching here and there, and with a groan of relief his attack was over.

Much pains were spent to learn if there was in this case any chance of explanation which would involve a suspicion of simulation. His malady, however, was very constant in its peculiarities. It had come on gradually, beginning with slight contortions; it made him unpopular in the work-room, where it was looked upon as some kind of possession; nor had he anything to gain by malingering, while his face had always that look of gloom and melancholy which such a torment as his would be apt to inflict on a person of sensitive temperament.

Dr. C. Handfield Jones* briefly calls attention to cases in which spasms occur owing to the weight of the body being brought upon the feet.

He mentions that Bamberger relates the case of a youth aged nineteen, convalescent from pneumonia, who had spasms of the legs when he touched the ground with his feet. There was tetanic rigidity, interrupted by violent sudden contractions, which increased in intensity. He says, also, that the face was flushed and distorted, but that all movements ceased when the lad lay down. If, while lying, the soles of his feet were pressed, the same phenomena appeared,

but with less intensity. He was cured by sedatives and cold affusion.

Bamberger's case is somewhat like the following, which I saw two years ago.

A lad, aged seven, of rosy tint and well nourished, had, when a year old, a sudden convulsion, and, soon after, a succession of fits, followed by several days of unconsciousness. His previous health was good; his family record was unimpeachable. When three years old he began to creep, but showed no desire to stand or walk. Long and strenuous efforts were made to induce him to stand, but he always drew his legs up and sank down. For a long while this was regarded as due to feebleness. By and by, however, despite the motions just mentioned, he would maintain himself erect, or partly so, and by the aid, for the most part, of his vigorously developed arms.

When I saw him I was struck with the child's intelligence, with his general look of health, and with the perfect use he had of all his members while lying down. Neither when he crawled could I see any failure of power or co-ordinating capacity in the legs.

After I had gone over his case with care, his parents placed him on his feet. I find it impossible to describe the confusion of motions which at once ensued: They seemed to me made up of choreoid movements of the hands, feet and face, with pretty violent alternate spasms of the flexors and extensors of the legs and arms, with strange rotatory twistings of the spine and neck. His face looked anxious, but twitched very little. When he was put on his back, every motion ceased at once. Pressure on the soles did not cause spasm. When held up by the arms or by the shoulders he had no spasms, but as soon as the feet were on the floor and he tried to stand, the storm of convulsive motions swept over him. The effort of standing seemed to be needed to cause the result. If he tried to walk he was thrown down by the spasms, and therefore did nothing but creep.

Electricity did not cause in him any spasms. The leg-muscles responded well to a moderate induction-current. There was no disturbance of sensation anywhere. When his soles were tickled he drew them up a little jerkily, but with no spasm.

I regret that this interesting case was seen by me but twice, and that my notes of it are not more ample. His parents, when once they learned that I did not regard the case as hopeful, were indisposed to give much information about it, and seemed to fear that the poor little fellow would be looked upon as a medical curiosity.

I believe I shall have done a good service by directing attention to the fact that voluntary motion may give rise to various forms of spasm. It is familiar enough that morbid sensations may do so, or that in an over-excited state of motor centres, a normal sensation may occasion like results, as in tetanus. As regards the cases to which I have here called attention, two explanations lie open to us. Voluntary acts give rise to spasms in the muscle willed to move, or in remote groups of muscles. There is at times an unusual discharge of nerve-force in some of these cases, as in the 'lock spasms' I have reported, or else the muscle itself has become the means by its over-use of hypersensitising the sensory centre which takes record of its activities, so that from this centre at times excito-motor impressions are radiated on to near or remote centres, and result thus in spasms. It will be found, in all of these

* 'Functional Nervous Disorders,' p. 398.

cases, that when an ordinary functional motor act gives rise to spasms elsewhere, these occur in muscles which have physiological and therefore anatomical relations to the muscles which, by their normal use, gave rise to the morbid activities. Thus, the face muscles are physiologically allied, and so volitional movements of one of them may cause spasms in others. The motion of one arm starts spasms in the other; and walking, which involves naturally the swinging of the arms, has a like potency. Why talking or chewing should do the same is less clear, but such morbid relationships have analogues in the cases of neuralgia, where the long irritation of one centre results at last in the like disturbance of remoter sensory centres and in radiated neuralgiæ, which are usually of unilateral relationship.

CLEEMAN ON METEOROLOGY AND EPIDEMICS.

The ninth volume of the *Transactions of the Philadelphia College of Physicians* contains a paper by Dr. Richard A. Cleeman on this subject, of considerable interest to those who study epidemics and

comparative meteorology. One fault runs through this, which is common to almost all similar reports. It is that the facts are not arranged in such a manner as to render them amenable to the criticism and comparison of practical busy men. There can be little doubt, in thoughtful and reflective minds, that Mr. Spencer Wells is quite right in his opinion, shared by some of the most successful operators on the continent, that the condition of the atmosphere in general has much to do with the success of operations. All who have long resided within the walls of a great hospital must know that a large majority of the deaths correspond with periods of great electric and barometric disturbances. But busy men cannot spare time to make elaborate tables out of papers like the present. Their compilers ought to present us with a *résumé* of the principal facts both of the weather and of the cases of sickness and mortality, so arranged that their parallelism or contrast is at once visible to the eye. We made the attempt to assist our readers in this matter as regards the paper before us. Unfortunately, however, such practical uses seem to have been but little contemplated by its compiler, and success has therefore only been partial:

General Characteristics of the Year 1875, in Philadelphia, United States.

Temperature	Barometer	Rainfall	Humidity	Winds	Prevalent Epidemics and Deaths.
The year was a cold one. The average temperature of the year was 50°·3° F., or 2°·7° less than average of 51 years. Lowest point, 5° F., January. Highest, 95° F., June, or an annual range of 100° F. The greatest range was in Dec. and Feb.; least in Aug. and July. The first frost was on Oct. 9.	Mean, 30°·059 inches, or the same as the average of last four years. The highest 30°·787 inches in Jan.; the lowest 29°·361 inches in Oct. The range for the year, 1°·426 inches. The greatest monthly range was during Dec., 1°·324 inches.	40°·24 inches of rain and melted snow, which fell in 154 days. (More rainy days, but less water than 1874, which had 46°·31 inches. In 1875, April showed only 2°·85 inches. The most rain in 1875 was in Aug. (6°·42 inches) and Nov. (5°·40 inches). An inch of rain is nearly 100 tons per acre.	67° (saturation being 100°) was the mean for 1875. (65° mean for 1874 though its rainfall was greater.) In August and Dec. 76°. (The highest mean.) Lowest point was in May (54°). The same thing was noted in May 1874 (58° mean for that year).	The prevailing winds were W. and S.W. The same remark applies to the year 1874. During March the prevailing winds were from the E., but this wind was not prevalent in any other month.	Out of 18,085 deaths (51°·21 per cent. males, 48°·79 per cent. females), in a population estimated at 800,000, Philadelphia, or 22°·6 deaths to the 1,000 living, 4,590 are put down to zymotic diseases. There were 56 from small-pox (21 in Dec.); 1,032 from scarlatina, Jan., Feb., March = 102, 89, 149; April, May, June = 121, 104, 171; July, Aug., Sept. = 87, 63, 30; Oct., Nov., Dec. = 33, 32, 31. Diphtheria, 656, (97 in Dec.). Croup, 429; Typhoid fever, 400 (less by 68 than 1874). Dec. and Aug. had most deaths from cholera infection, 992 deaths, mostly in June. Whooping cough, 125, nearly 1/2 in 24th Ward, or West Philadelphia, whose population is only 1/4 of that of the entire city. There were 20 deaths recorded from sun-stroke.

Dr. Cleeman calls attention to the simultaneous prevalence of scarlatina, croup, and diphtheria, and infers from local circumstances that some, at least, who made these returns, used these names one for the other. In view of recent discussions, this is an interesting observation. Another point of interest, also needing local knowledge to establish it agrees with general experience elsewhere, and that is that the diseases of the zymotic class, and especially deaths from this cause, depend chiefly upon conditions of imperfect sanitary arrangements. Most of these might and ought to be prevented. These epidemics may be, and doubtless are, like all mundane affairs, dispensations of Providence, but they will soon cease to be mysterious, and would most of them cease to exist, if we would only obey and enforce the divine laws of health. W. BATHURST WOODMAN.

LADREIT DE LACHARRIÈRE ON AURAL POLYPI.

In the *Archives des Maladies de l'Oreille et du Larynx* for August, 1876, Dr. Ladreit de Lacharrière

has a paper entitled 'Practical Considerations on Polypi of the Ear.' According to the author, polypi of the ear are of such common occurrence, that scarcely a week passes in which aural surgeons do not see them. In spite of this, however, a glance at what has been written upon them will suffice to show that the study of their growth is not yet complete. Toynbee classes three varieties, the raspberry polypus, the fibro-gelatinous polypus, and the celluloglandular polypus. Bonneton shows the analogy existing between aural and nasal polypi, and observes that the difference of structure which they present depends on the differing condition of the structures from which they originate. The most exact classification from an anatomical point of view is that of Roosa and Steudener, by whom they are divided into mucous and fibrous polypi, and myxomata. In the present paper, polypi are studied with especial reference to their state of origin and their treatment. Under the term polypi, however, must not be confounded malignant tumours of the ear, which are true cancers, develop themselves with prodigious activity, and have a great tendency to return after removal.

Bonnefont says, 'The point of insertion of polypi may be in all parts of the meatus and of the membrana tympani; but, contrary to the opinion of most surgeons who maintain that polypi rarely arise from the fundus of the meatus, I hold that one finds them more often near or on the membrana tympani than at the orifice of the meatus.'

Von Trötsch says that polypi may arise in different parts, the meatus being the rarest point of origin. Toynbee and Wilde, on the contrary, have most often found them in the meatus, the latter principally on its superior wall.

The experience of the author induces him to agree with Von Trötsch in considering polypi of the middle ear as much the most frequent, an attentive examination showing that in eight out of ten cases the cavity of the tympanum is the point of origin. Polypi developed in the cavity of the tympanum are generally of fibrous or fibro-cellular kind. They rarely contain spaces in their interior. In appearance they are whitish or slightly rosy, and somewhat dense in structure. They may originate from the walls of the meatus or the membrana tympani, but this is rare, the mucous polypi being those most frequently observed in the latter situation. These are whitish and almost transparent, containing spaces, or a cellular tissue, with rather large meshes, filled with a colourless mucous liquid. Their base is often very narrow; they are slightly adherent, and are easily, sometimes even spontaneously, detached. They almost always arise from the surface, but very rarely from the centre, of the membrana tympani; some point in the circumference being their most frequent seat. Von Trötsch observed a polypus due to a transformation of the membrane, all the elements of that tissue being represented in it.

On the walls of the meatus all the three varieties of polypus described by authors may be found, but more rarely than in the tympanic cavity. Their diverse structure may be understood from the various elements in which they originate. The mucous polypus originates from the glandular follicles, the fibrous from the inflamed periosteum, the myxoma or raspberry polypus from the surface of the bone itself, denuded either by ulceration or by circumscribed abscess.

Dr. Motte has made some researches on the causes of these morbid growths, the generally accepted theories of the production of tumours not satisfying him. He believes that the development and reproduction of aural polypi is always due to a sanguineous hyperæmia, or to a plastic exudation. 'Let us destroy,' says he, 'in any manner, a polypus which has existed many years, at the fundus of the meatus; if it is rather small, and its pedicle narrow, this pedicle will give passage to one or more vessels relatively of considerable size, the obliteration of which will only throw the trouble on to the neighbouring parts, nourished by the collateral branches in connection with it. Von Trötsch has shown that the external auditory meatus and the membrana tympani receive their vessels from the same vascular trunk, viz., the deep auricular artery. It follows then that the membrana tympani in particular becomes the seat of a hyperæmia, which will furnish the elements necessary for a series of remarkable organic evolutions.'

With this theory, however, the author does not agree, but believes that inflammation will account for all the morbid productions of the auditory meatus, and explain their recurrence and multipli-

cation. Here, however, we may ask, is not hyperæmia the first primordial element in inflammation? Yes, but it is only the initial element. Sometimes, in fact, it is as the sequel of otorrhœa which has lasted a long time that we see a polypus appear. The cause here is evident, and it is the most common. If the affected surface be cleaned, ulceration is seen on which growths originate just as in all wounds, and these growths develop polypi. At other times, on the contrary, the polypus seems to be the cause of the otorrhœa, and this is proved by the fact that its removal is followed by immediate cure.

If we then seek for the point of its implantation, we find it very limited, and are led to believe that an inflamed glandular follicle or a little abscess has been the origin of the tumour. In either case, inflammation is a sufficient cause for the malady.

What has been said as to the nature of aural polypi shows how useful it is to look for the points of growth before determining what means shall be used to destroy them. These proceedings will differ according as the polypus has its seat in the auditory meatus, on the membrana tympani, or in the tympanic cavity. The nature of the tumour will also influence our choice of procedure.

The introduction of a stylet will tell us whether the polypus arises from the wall of the meatus. Its penetration very deep will show that the growth comes from the tympanic cavity. This mode of exploration, however, will be incomplete if the polypus, developed in the tympanum, emerge through a small perforation in the membrane. We must remember, however, that fibrous polypi most commonly arise from the cavity and rarely from the membrane. A mucous polypus, on the contrary, may be presumed to arise from the membrane. In cases of doubt a loop of wire carried round the tumour by a stylet will close up the diagnosis. It will now be necessary, as Bonnefont recommends, to examine the state of the function. If the watch or the tuning-fork be heard most clearly on the mastoid process, the chances will be considerable that the obstacle is not in the tympanum, and that the polypus originates in the meatus. If, on the contrary, the watch be heard equally badly everywhere, the situation of the polypus will be the opposite.

Now, as to the treatment of aural polypi; the three methods which have been employed are evulsion, excision, and cauterisation. Evulsion is an easy method, and consists merely in seizing the polypus with forceps and twisting it on itself until it is detached. This method, which is without danger for polypi of the meatus or for mucous polypi of the membrane, which are detached with the very slightest force, will not be without inconveniences in cases where the polypus arising from the membrane is fibrous in character.

We shall be liable to tear the membrane and dislocate the handle of the malleus, or to produce more or less serious lesions in the cavity and strippings of the mucous membrane, the consequence of which it would be difficult to foresee; finally, hæmorrhage might be produced to a serious amount. Wherever, therefore, any doubt exists as to the seat or anatomical structure of a polypus, evulsion must be renounced, and excision employed. This operation may be performed by scissors, thin and curved on the flat, but for their use the meatus must be somewhat large, and the polypus small. With scissors,

also, we are liable to cut above the pedicle, and this will always happen with polypi of the cavity. A metallic wire is preferable; Wilde's polytome being the instrument most often employed. Some recent modifications by Dr. Desarmes and the author have made this instrument more convenient. With it excision of the polypus is easy, and the patient is not exposed to any of the dangers of evulsion. In order to use it with certainty, the point of implantation of the tumour must be found. If the tumour be not cut at its base and reproduction seem probable, the morbid growth must be treated by cauterisation.

The caustic most frequently employed is nitrate of silver. Although it is the most innocent it is also the most unreliable. The cauterisation being very superficial, it sometimes, instead of destroying the disease, sets up a new morbid action for its reproduction. Von Trötsch recommends Vienna paste and chloride of zinc. The Vienna paste, from the facility with which it flows, affects parts which we wish to preserve. Acid nitrate of mercury and chromic acid destroy the tissues deeply, but they destroy more deeply than we wish, and expose the patient to serious inflammations, and sometimes also cause severe pain. The author has sought a caustic the action of which should not be too violent, but should be capable of destroying what he wished to attack. A remembrance of Dr. Maisonneuve's attempt to destroy tumours by the aid of points gave the idea of having recourse to the same means for the ear. He had prepared sticks of chloride of zinc and a little morphia with wheat-flour. These points, dried in the oven, acquire a hardness which allows them to be introduced by pressure into the tissue which it is wished to destroy. Their caustic action is very slightly painful, and they do not penetrate too deeply into the tissues with which they come into contact. The author has thus destroyed, almost without pain, parts of the polypus which excision had not affected, and has daily obtained satisfactory results.

W. DOUGLAS HEMMING.

ASHHURST ON THE OPERATIVE AND CONSERVATIVE SURGERY OF THE LARGER JOINTS, AND ON OPERATIONS FOR DISEASE OF THE KNEE-JOINT.

The ninth volume of the *Transactions of the Philadelphia College of Physicians* contains an article (read March 1, 1876) by Dr. John Ashhurst, junior, [who is best known perhaps for his papers on Obstruction of the Bowels] with remarks by Drs. Packard and Hodge. Dr. Sayre has since intimated his agreement with the views enunciated by Dr. Ashhurst. We thus have four American surgeons of repute agreeing as to the treatment of these troublesome affections. The author of this paper has previously published one on Excisions of the Elbow-Joint. The cases are carefully reported and illustrated with engravings on wood from photographs and drawings. Leaving these as an inducement to surgeons to refer to the original paper, we briefly abstract a few of the practical remarks and suggestions it contains.

As to age, he deprecates operating on very young children, mainly for reasons similar to those which weigh with British surgeons. Except in special cases, he postpones it until at least five years of age has been reached. The great mortality of such

operations also renders them undesirable in persons past middle age. The age from five to ten years is most favourable for excision of the knee-joint. Dr. Ashhurst is a strong believer in constitutional treatment of these joint-diseases. But, whilst admitting that rest and remedies will often supersede the knife in any shape, he yet justly holds that the stage of the disease is of far more consequence than its mere duration. In cases of gelatinous arthritis, he advocates operating earlier than in other forms, on account of its having, apparently, no tendency to spontaneous cure.

Like most British surgeons, he considers excision as a much more serious operation than amputation. The question, as he justly remarks, is not to be settled by mere figures, since the excision cases are selected ones. Yet he has himself lost no case from excision whilst (see table) one of his amputation cases died—this case, however, was one of suppuration and destruction of the knee-joint, and the man had atheromatous arteries, which occasioned difficulty in ligaturing them [? a case for acupuncture]. The cases selected for excision should be free from any visceral disease. He advocates a single transverse incision across the front of the joint, immediately below the patella, the extremities of the wound being carried well backwards, so as to insure free drainage during the after-treatment. [Proposed by Park in a letter to Percival Pott, first employed by Textor, Kempe of Exeter, and Sir W. Fergusson]. For clearing the posterior surface of the condyles, he uses Erichsen's strong probe-pointed knife, with limited cutting edge. For the bones, a Butcher's saw, reversing the blade so as to divide the bone from below upwards. The blade of the saw, thus used, should be so fixed, that its teeth will point backwards, as the force of the arm in sawing upwards is more pulling than pushing.

The condyles should be sawn in a plane, which, as regards the axis of the femur, is oblique from behind forwards, from below upwards, and from within outwards. The tibia should be sawn in a plane transverse to the long axis of the bone, with a slight antero-posterior obliquity to correspond with that of the section of the femoral condyles. Do not remove the whole of the condyles ($\frac{1}{2}$ -inch to 1-inch slice, and even less, according to thickness, is usually sufficient for the tibia). He removes the patella with the extremity of the femur, only using the skin and subcutaneous fascia for a covering, and removing all the other overlying tissues. Thus the suppurating bed left by scooping out the patella is avoided. He uses anæsthetics all through the operation, even to the adjustment of the splint, which he thinks best done with the limbs raised to an almost vertical position. No tourniquet is used, each vessel being secured as divided. He always removes the patella. He uses Dr. Packard's bracketted splint, the brackets being attached on each side to a posterior wooden splint which is interrupted below [*i.e.* under] the knee. (*Trans. Coll. Phys. Philadelphia*, second series, vol. iv. p. 342.) A movable trap fills up the vacancy; it is lifted in and out, and fixed by buttons, instead of sliding. A foot-board has been added by Dr. Ashhurst, and this simple apparatus which has succeeded so well, is figured, as well as a wire-splint on a similar model. Side-splints may be added, but plaster can be attached to the inner bracket, or to both. He advocates the straight position, as unquestionably the best for the stiff limb we expect to get. Whilst the wound is to be dressed daily or as

often as required, the limb should not be disturbed for six weeks if possible. At all events, a fortnight should elapse without any disturbance. He quotes Pénrière's statistics, which give a mortality of over 30 per cent. in 431 cases of excision for chronic disease. The mortality from one to five years was 39 per cent., from five to ten only 15.5 per cent., ten to fifteen gave 19 in the 100, fifteen to twenty-five gave 33 per cent., and all later periods 43 in the 100. Fifty-seven per cent. recovered without further operation, about 1 per cent. after re-excision, and 11 per cent. after (subsequent) amputation. These include the earlier cases, of which many were unselected. Excision of the knee for gunshot injury have been carefully investigated by Cousin, Chenu, Lotzbeck, and Küster. Their figures are as follows : Cousin,

33 cases of total excision gave 28 deaths, or 85 per cent. ; 11 partial cases, 10 deaths, or 91 per cent., or both together over 86 per cent. Chenu's figures (Franco-Prussian war) give 95 deaths out of 102 cases, or over 93 per cent., with a similar preponderance of deaths in the partial cases. Lotzbeck's and Küster's statistics give 73 per cent. out of 66 cases collected by the former, and over 65 per cent. out of 101 cases collected by the latter ; whilst amputation in the lower third of the thigh for gunshot injury only gives 55 per cent. of fatal cases, according to Legouest, and 50 per cent. according to Macleod. Dr. Ashhurst concludes that excision of the knee-joint should be banished from military surgery. The appended table shows the results of the cases given in the paper.

Summary of Dr. Ashhurst's Cases of Excision of the Knee-joint and Amputation in the Thigh for Knee-joint Disease.

I.—EXCISION.

No.	Sex	Age in Years	Nature of the disease and side affected	Duration of disease before operation	Result and duration of treatment after operation	Remarks
1	Male	10	Partial ankylosis of right knee, with recurrent arthritis	Four years	Recovered : five months	Useful limb
2	Female	11	Arthritis of right knee after small-pox	Six years	„ one year	„
3	Male	18	Arthritis of right knee with intra-articular abscess	One year	„ sixteen months	„
4	Male	9	Arthritis of left knee with abscess	Three months	„ four and a half months	„
5	Female	9	Arthritis of left knee, with partial ankylosis	Two years	„ twenty months	„
6	Female	8	Gelatinous arthritis of right knee	Three years	„ still under observation	„
7	Male	5	Gelatinous arthritis of right knee	Over two years	„ six months	„
8	Male	6	Gelatinous arthritis of left knee	One year	„ five months	„
9	Male	5	Gelatinous arthritis of left knee	About two years	„ still under observation	Still wears splints
10	Male	7	Partial ankylosis of left knee, with recurrent arthritis	Two years	Convalescent : still under observation	„ „

II.—AMPUTATION.

11	Male	13	Arthritis of left knee, with necrosis of tibia	One year	Recovered : two and a half months	Death from exhaustion
12	Male	5	Arthritis, with caries of right knee	Eighteen months	Recovered : three weeks	
13	Male	51	Acute disorganisation of the left knee-joint	Five weeks	Died : eight days	
14	Male	13	Gelatinous arthritis of left knee, with caries	Five years	Recovered : seven weeks	
15	Male	18	Arthritis of left knee, with necrosis of tibia	Over two years	„ fifteen months	

Dr. J. H. Packard remarked, as regarded his splint, that he first took an accurate outline of the limb by laying it on a large sheet of paper, and carrying a lead pencil around it, from the greater trochanter on the outer side, up to the perinæum on the inner. If the limb cannot be straightened, the outline should be made on the page by measurement ; then cutting out the piece so defined, it should be tested and corrected by applying it to the under surface of the limb. The shape of the fold of the buttock should be carefully traced. Finally, the exact points should be marked at which the section for the trap for the knee is to be made ; the inner ones should be nearer together than the outer ones, so that the lines may converge somewhat. By this outline the splint should be cut out of stuff proportioned in thickness to the size of the limb ; for an adult a board

about an inch thick is right. The splint should be about three inches longer at the heel than the outline ; and if it be made to extend out three inches on each side, it will serve to keep the limb steadier. For some distance from its upper end, the splint should be carefully bevelled, so as to prevent any pressure of an edge against the skin, and the whole splint should be slightly hollowed from side to side, so as to form, as it were, a very shallow trough for the limb. At the heel, this hollow should be made much deeper, and a longitudinal slit should be mortised to receive the tendon of the foot piece. Dr. Packard fixes the sliding-trap by hooks and eyes on the inner side. The brackets should bulge a little outwards to leave room for swelling. He uses leather side-pieces (laced in front) for thigh and leg.

Dr. H. L. Hodge preferred using strapping instead

of any lacing apparatus. He had two very successful cases in adults: one drives a street-car, the other is a night nurse at the hospital.

W. BATHURST WOODMAN.

HUNTINGTON ON PULMONARY GANGRENE.

In the *Boston Medical and Surgical Journal*, for Oct. 26, Dr. Thomas W. Huntington has published a graduation thesis on thirty-two cases of pulmonary gangrene, compiled from the Massachusetts General Hospital records, from 1857 to 1875 inclusive.

The principal motive prompting to this work was a desire to learn more accurately, if possible, what is the probable course and termination of the disease. There seems to be an impression very generally prevalent that the disease, once fairly established, is progressive in its tendency, and that the lung refuses to set up the line of demarcation so essential to repair and cure. Niemeyer, in writing of this subject, states that recovery 'is a very rare event indeed.' Hertz, in the treatise published in Ziemssen's Encyclopædia, remarks, 'The prognosis is not absolutely unfavourable, as was once supposed.'

Considering the urgent and most distressing symptoms of pulmonary gangrene, unmistakable alike to patient and to attendant, it is not wonderful that such an opinion arose, even if it can be shown to be quite erroneous. It is certainly true that but few and meagre collections of such cases have been made, from which alone an accurate judgment can be formed.

Before proceeding further, it is proper to mention the two forms of the disease ordinarily described, and to indicate that which in this connection is more interesting. Diffuse gangrene, involving from the beginning an extended tract of lung-tissue, is by far the rarer form, and from its nature runs an inevitably fatal course. Cases coming under this head must clearly be discriminated against in estimating the results in the more common and less serious circumscribed gangrene, wherein a limited portion or portions of tissue are implicated, admitting on theory at least the possibility of repair.

Another preliminary statement suggests itself regarding the records of the cases, many of which for various reasons are found to be defective in important details. Thus, in the records of the thirty-two cases the matter of hereditary tendency is entirely ignored in twenty-one. In five there was a history of phthisis, in one of pulmonary gangrene, and in five the 'family history' was reported as good. With regard to habits, a very important item as bearing upon causation, there is no record whatever in twenty six cases, while in six the free use of liquor is noted. Considering the class of patients which forms a large majority of the cases, it is safe to assume that intemperance formed an element in very many of them, so that any deductions from the above data would be quite valueless.

Sex.—Of the thirty-two patients twenty-four were males and eight females. In the same number of cases collected by Lebert and mentioned by Hertz, twenty-two were males and ten females.

Age.—The youngest patient was ten years of age; disease complicated with phthisis and empyema; the result was fatal. The youngest patients without complication were two aged eighteen. Both were discharged 'much relieved,' and with a prospect of permanent recovery. The oldest was sixty-four.

the disease following croupous pneumonia, diffuse; result fatal. The next oldest were two, aged fifty. In one the gangrene was diffuse, following pneumonia; result fatal. The other was a well-marked case of circumscribed gangrene. The patient was discharged, well.

The following is a division of ages according to decades :—

Between	1 and 10	there was	1 case.
"	10 and 20	there were	3 cases.
"	20 and 30	there were	9 cases.
"	30 and 40	there were	12 cases.
"	40 and 50	there were	4 cases.
"	50 and 60	there were	2 cases.
"	60 and 70	there was	1 case.

Total . . . 32 cases.

Employment.—The twenty-four males were distributed among eight different callings. By far the greater number were inevitably subjected to extremes of temperature and to wet. Thus, twelve were common labourers, four were seamen, and the remaining eight were variously occupied. The eight females represented but three different callings: five were domestics, two were housewives, and one was a seamstress. In brief, twenty-one of the thirty-two cases can be said to have had exposure as an element in causation.

Duration.—No accurate statements can be made upon this topic, except in those cases which terminated favourably or fatally while under observation, as there are no subsequent data concerning those discharged during the progress of the disease. Of the eleven fatal cases, the longest was in progress ten months, the shortest one month; average duration, 3·3 months. Of the seven cases of recovery four had a duration of seven months, two of three months, and one of four months; average duration 5·3 months.

Causation.—Little remains to be said upon this topic, further than the general statements made under ‘employments’ and ‘habits.’ It is interesting, however, to note that of the eleven fatal cases, in seven the disease was preceded by croupous pneumonia, in one by cancer of œsophagus (gangrene caused by mechanical pressure), and in one by empyema and phthisis. In both the last cases death was due in large part to the original disease.

Results.—Seven cases were discharged well; six much relieved (these with proper care and favourable circumstances doubtless proceeded to ultimate recovery); three cases were temporarily relieved; five were not relieved, two of which were in the hospital but for a brief period, and were not treated; eleven cases terminated fatally. Several of the above statements will be subject to further comment under the following topic.

Complications.

Cases with complication	10
Cases without complication	22
Phthisis as a complication occurred in	8
Empyema " " " "	1
Cancer of œsophagus " " " "	1

In seven of the cases without complication gangrene followed pneumonia, and was diffuse. The termination was fatal.

Leaving the latter out of the discussion, according to the original plan, the following statement can be made. Of the fifteen cases without complication, five were well, six much relieved, one was relieved temporarily, three not relieved, none died. In other words, among the cases of circumscribed gangrene,

there were eleven favourable and four unfavourable terminations.

On the other hand, of the complicated cases, four died, two were not relieved, two were temporarily relieved, and two were cured of gangrene. That is, two terminated favourably, so far as the disease under consideration is concerned, and eight terminated unfavourably.

Summary of results and complications per cent. :

	Without Complica- tions.	With Complica- tions.
Terminated favourably . . .	73·3	20
Terminated unfavourably . . .	26·6	80

ANATOMY AND PHYSIOLOGY.

STROGANOFF ON THE PROCESS OF OXYDATION IN NORMAL AND ASPHYXIATED BLOOD.—N. Stroganoff (Pflüger's *Archiv*, Band xii., *Centrabblatt für die Medicinischen Wissenschaften*, no. 28) has endeavoured to decide the question.—1. *Whether the Blood of an Asphyxiated Animal still contained Oxy-hæmaglobin.*—He placed between two glass plates the completely isolated jugular vein, or the carotid of rabbits, and compressed them so that a spectroscopic investigation was possible. The vessel was protected from contact with the air. It was invariably found that the blood, even at the last moment of the last cardiac contraction always contained oxyhæmaglobin.

2. *On the Amount of Oxygen in the Lungs during Asphyxia.*—The composition of the air of a closed space in which the animal, in consequence of want of oxygen (the carbonic acid was absorbed) was asphyxiated, was estimated when the respiratory movements ceased. As the mean of four experiments, the amount of oxygen in the air at this moment was 3·54 per cent., agreeing well with previous results. If one assume, that the blood had absorbed the same amount of oxygen from this blood as in normal respiration, then the amount of oxygen in the air within the lungs would be 2·73. The complete cessation of all respiratory movements is regarded by the author as the second stage, and at once the air still remaining in the lungs was extracted by means of a mercurial air-pump. The analysis gave as the mean for the oxygen of this air 2·337. If the air were taken from the lungs after cessation of the movements of the heart, the amount of oxygen was only 0·403 per cent.; almost all the oxygen, just to a trace, was absorbed by the blood.

3. *On the Capacity of Asphyxiated Blood to absorb the last Traces of Oxygen from the Air in the Lungs.* Asphyxiated blood taken from an animal after cessation of the respiratory movements, was shaken with a quantity of air very poor in oxygen, and then its composition ascertained. It was shown that the blood absorbs oxygen, even when the latter is only present to the amount of 1 per cent. or less. To determine whether this is also true of the lungs, Stroganoff pumped out the air from the lungs after cessation of the respiratory movements, and introduced air of known composition instead. Here also oxygen disappeared from the air. The amount of oxygen introduced with the air, in one case was 1·289 cubic centimetres; the remainder 0·747. The blood in the lungs therefore absorbs oxygen from the air in the lungs, even after cessation of the respiratory movements, so that not a trace of oxygen is left.

4. *On the Extent of the Oxydation Process in Normal and Asphyxiated Blood.*—In order to estimate this in asphyxiated blood, it was shaken with a sufficient quantity of atmospheric air, and the amount of oxygen remaining, and that of hæmoglobin determined. If the amount of oxygen absorbed is greater than corresponds to the quantity of hæmoglobin, then oxygen must have been used for the oxydation of reducing substances in the blood. As asphyxiated blood is never quite free from oxygen—according to Pflüger, 1·75 volume per cent.—this also must be taken into consideration. The experiments were repeated in the same way with arterial and venous blood. Even arterial blood absorbs oxygen, as Pflüger had already shown, to the extent of 1·066 to 1·295 cubic centimetres for 100 cubic centimetres. Stroganoff assumes that the blood, in virtue of its hæmoglobin, is completely saturated with oxygen. The asphyxiated blood invariably absorbs considerably more oxygen than corresponds to its amount of hæmoglobin, to the extent of 4·93, 2·84, 3·31, and 2·34 cubic centimetres for 100 cubic centimetres of blood. If one assume the amount of oxygen contained in it as = 1·75 volumes per cent., we have the mean 5·10 volumes per cent. as the expression of the reducing substances present in the blood. The author then deducts the amount of oxygen required by the blood for the oxydation = 1·18 cubic centimetres, and arrives at the number 3·927 cubic centimetres of oxygen. For all the details and data of the experiments we must refer to the original.

BUDGE ON THE LYMPHATICS OF THE LIVER.—A. Budge (Ludwig's *Arbeiten*, Band x.) from his injection experiments draws the following conclusions regarding the perivascular spaces of the liver. A closed system of lymphatics exists in the liver, and is in most intimate relation to the venous blood-vessels. Within the lobules there are simple lymphatic sheaths around the blood-capillaries, which prevent the direct contact of the hepatic cells with the blood, so that any exchange between these can only take place through the medium of the lymph. Just as the blood-capillaries at the margin of the lobules unite into larger trunks, so the lymph-sheaths pass into lymphatics, which are placed in the walls of the veins, and by means of the interlobular vessels pour their contents upwards into the lymphatics of the diaphragm, and downwards into those of the hilus.

W. STIRLING, D.Sc., M.D.

ALLEN ON THE ANATOMY OF THE PERINÆUM.—Dr. Harrison Allen (*Transactions of the Philadelphia College of Physicians*, vol. ix. p. 114), says: The perinæum, used in the sense of that region which occupies the inferior outlet of the pelvis, is composed of two distinct elements, the splanchnic and integumental.

The splanchnic is represented in the pelvic fascia; the integumental in the external sphincter and transverse perineal muscles, superficial fascia, fat and skin. It will be seen that the pelvic fascia is modified subperitoneal connective tissue. It should be described as distinct from the obturator fascia, which extends the entire length of the pelvic portion of the internal obturator muscle, terminating at the tuberosity of the ischium, where it is continuous through the falciform process with the great sacro-sciatic ligament. The continuity of these structures is of

some significance when we learn that this ligament, as it is called, is, in fact, little else than a fascial extension upwards of the biceps flexor muscle, and is made tense when the thigh is flexed on the trunk, and relaxed when both the femur and innominate bone are in the same line. Two conclusions can be drawn from these premises. (1) The biceps flexor, while aiding the semi-membranosus and semitendinosus muscles in maintaining the erect position, has also an important function, not enjoyed by them, of making tense the sacro-sciatic ligament in flexion of the hip-joint. (2) The tension of the ligament secures tension of the obturator fascia. Now the fascia, in this way made tense, yields an effective fixed point to the levator ani muscle. When the use of this muscle in the act of defecation is considered, viz., to support the rectum, and to guide the direction of the pressure from above, it will be seen that the squatting position is the most natural one to assume in defecating, and that any interference with the play of the biceps over the tuberosity of the ischium impairs the efficiency of this act. The privy seat, which fixes the tuberosity in defecation, and the habit of relaxation of the parts above described, acquired by resorting to this questionable accessory of a modern dwelling, may be looked upon as related causes of many phases of passive congestions of the pelvic organs, and particularly of those leading to internal hæmorrhoids.

[The reporter, whilst freely admitting the cogency of Dr. Allen's arguments, begs to observe that constipation is no modern ailment, since Catullus sang in hendecasyllabic verse, to Furius, in this wise :

Nec toto decies cacas in anno.—*Rep.*]

W. BATHURST WOODMAN.

BERNARD ON THE INFLUENCE OF ETHERISATION ON VITAL PHENOMENA.—At the meeting of the Société de Biologie de Paris on October 28, Dr. Claude Bernard gave an account of some new experiments he had made on this subject (*Progrès Médical*, November 4). In a previous communication he had shown that anæsthetics suppress, during their action, some vital phenomena, movements of the sensitive plant, germination of cresses, fermentation of beer-yeast, etc. His recent experiments have been made on the lower animals—small eels. It is known that these animals when dry lose all movement, and remain inert, but it is sufficient to place them in water to see them resume their movement. If we plunge them in pure chloroformed water the movements disappear, and immersion in water will not bring them back; the animals are dead. But if we plunge them into a chloroformed solution diluted with its weight of water the movements cease, the animals fall inert. On withdrawing them from this liquid to place them in water, however, the movements are renewed; in this the anæsthetic action has not been sufficiently strong to kill the animal. Etherised water acts in a similar manner, but with less intensity than the chloroform. If these facts be considered together with those previously established, we must conclude that anæsthetic agents are, so to speak, re-agents on the vital phenomena suspended during etherisation.

How do the anæsthetics act? Their action is exerted on all the elements as well as on the nervous system, which is the first affected. The exact nature of the phenomena must still be sought; nevertheless it seems probable that it is the protoplasm which is modified by the anæsthetic agent.

It has been remarked, in fact, that the muscles during etherisation become opaque, recovering their transparency when the etherisation ceases. The same phenomenon was present in the above-mentioned animals during and after etherisation.

In the discussion which followed, M. Berthelot asked whether this action of the anæsthetics might not be explained as a chemical modification. In fact, they coagulate the albumen and the myosine. Besides, the existence has been found in the sensitive plant and in the seeds of vegetables of a substance analogous to the proximate principles of the cerebral substance. It is possible that anæsthesia in vegetables and animals may be due to a chemical modification of these proximate principles.

W. DOUGLAS HEMMING.

RUTHERFORD AND VIGNAL ON THE BILIARY SECRETION OF THE DOG.—A second series of experiments on this subject by Professor Rutherford and M. Vignal are partly described by them in the *Journal of Anatomy and Physiology*, vol. xi. part 1, pp. 61–86. The methods employed were the same as in the first research. The substances were in each case introduced directly into the duodenum of a fasting dog, and the flow of bile was estimated every fifteen minutes. Small doses of curara were given to prevent muscular movements, but anæsthetics were not administered on account of their disturbing influence on the biliary secretion. The different substances experimented with, and the results obtained with them, are shortly as follows.

Euonymin, an impure resin obtained from the bark of *Euonymus atropurpureus*, employed in America and reputed to be a tonic, hydragogue, cathartic, diuretic, and antiperiodic, was used in two experiments. 1. Five grains, mixed with a small quantity of boiling water, powerfully stimulated the liver. 2. At the same time there was only a slight increase of intestinal secretion; hence its purgative effect in the human subject may be chiefly due to increased 'secretion of bile.' The authors think this substance worthy of far greater attention in practical medicine than it has received hitherto.

Sanguinarin was also employed as a resin. It was stated by Tully in 1830 to be a very decided cholagogue in small repeated doses, and recommended by Mothershead of Indianapolis as an excitement of the liver when given in small alternative doses. Two experiments were made. 1. In one experiment three grains, in another one grain, mixed with bile and water, powerfully stimulated the liver. 2. It rendered the bile more watery, nevertheless caused the secretion of more biliary matter in a given time. 3. The secretion of the intestinal glands was slightly increased. The statements of the above writers are therefore deserving of attention.

Iridin, a resin prepared from the root of *Iris versicolor* (American blue flag) 'is thought to unite cholagogue and diuretic with aperient properties' (Wood and Bache). Two experiments were made. 1. Five grains mixed with a little bile and water very powerfully stimulated the liver. It is not so powerful as large doses (four grains) of podophyllin, but 'it is more powerful than euonymin.' 2. It is a decided stimulant of the intestinal glands. Its irritating effects on the intestine mucous membrane are decidedly less than those of podophyllin, (which corresponds to a statement concerning it made in the *Lancet* for 1872), while 'the purgative effects are greater than in the case of euonymin.'

Leptandria, a resin prepared from the root of the American plant, *Leptandria Virginica*, or *Veronica Virginica*, has been lauded as a cholagogue and tonic, and is now much employed. Two experiments were made. 1. When mixed with bile it stimulates the liver, but very feebly. It excites the liver to secrete bile having the ordinary composition. Like 'podophyllin,' it produces scarcely any effect unless the biliary solvent be present. 2. It is a feeble stimulant of the intestinal glands.

Ipecacuan. Four experiments were made. 1. Sixty grains of powdered ipecacuan, mixed with a small quantity of bile, powerfully stimulated the liver. Even 3 grains had an effect on a dog weighing 6·8 kilogrammes, very nearly as great as the effect of 60 grains on a dog weighing 27·2 kilogrammes. 2. The bile secreted under its influence was normal as regards the biliary matter proper. 3. No purgation was produced, but there was an increased secretion of mucus in the small intestine. It is certain, the authors think, that this substance has the power of stimulating the secreting apparatus of the liver. These experiments, they think, will lead to new speculations regarding the pathology of dysentery.

Colocynth. Two experiments were made. 1. It is a hepatic stimulant of considerable power. It renders the bile more watery, but nevertheless increases the secretion of biliary matter. 2. It is a stimulant of the intestinal glands.

Falaf. Three experiments were made. 1. It is a hepatic stimulant of considerable power. It renders the bile more watery but at same time increases the secretion of biliary matter. 2. Its effect on the liver is, however, far less notable than its hydragogue cathartic effects on the intestinal glands. These experiments illustrated a fact often witnessed by the authors, that severe purgation diminishes the secretion of bile.

DUCKWORTH ON A SMALL APERTURE IN THE SEPTUM VENTRICULORUM NEAR THE APEX OF THE HEART.—Dr. Dyce Duckworth (*Journal of Anat. and Phys.*, vol. xi. pt. i. p. 183) describes a case of this deformity, which is rare on account of the unusual situation of the opening. It was large enough to admit a crowquill, and situate at the junction of the middle and lower thirds of the septum, near the posterior part. The object of it, a male child, born at full time, was cyanotic at birth.

E. CRESSWELL BABER, M.B.

GULLIVER ON THE COMPARATIVE PHOTOGRAPHS OF BLOOD-DISCS.—Mr. G. Gulliver, makes some interesting remarks on this subject, in the November number of the *Monthly Microscopical Journal*. After disabusing the minds of his readers of any attempt on his part of analysing the relative merits of American microscopists in this department, he proceeds to point out that the corpuscles of one species of the vertebrate class seen in a single individual, differ so greatly in size, that the average dimension cannot be obtained with absolute certainty, whilst in many mammals the blood-discs are absolutely indistinguishable from those of man. The blood of most ruminants and most feræ can be readily recognised from that of man, whilst the corpuscles remain regular, but this is dubious with regard to the blood-spots which come before medical jurists. He considers the efforts of Drs. Richardson and Mees, and Professor Wormley, as highly praiseworthy, and the

results already obtained as creditable to American micro-photography.

SATTERTHWAITE ON THE STRUCTURE AND DEVELOPMENT OF CONNECTIVE SUBSTANCES.—In the Nov. issue of the *Monthly Microscopical Journal*, Dr. Satterthwaite of St. Luke's Hospital (New York) contributes the results of his inquiries in this direction.

The writer first considers the neuralgia, and points out the fact that the corpuscular element has not been definitely described. He recommends as a method of examination the immersion of the brain or cord in a 5 per cent. solution of bichromate of potash, or Müller's fluid, for a few days afterwards in alcohol until perfectly hard. The sections are stained with hæmatoxylin, mounted in glycerine, and teased with needles. He groups the corpuscular forms met with here under three categories, viz., 1. Ganglionic cells; 2. Lymphoid cells; 3. Small irregularly branched corpuscles. Passing on to the connective elements of tendon, the writer regards both the silver and gold method as most valuable for the demonstration of the nuclei, the epithelioid layer of the tendon bundles, and the fibrillated structure of older tendons. Dr. Satterthwaite next directs attention to the adipose tissues, their demonstration, and the nature of the evidence that fat-corpuscles are transformed corpuscles of the fibrous tissues. The nature of the lymphoid corpuscles described by Waldeyer, is briefly touched upon by the author, but no definite conclusion is arrived at. Intermuscular tissue he regards as a soft, structureless, homogeneous matrix, in which oval, flattened, plate-like bodies are imbedded, closely related to the neighbouring elastic network. In the connective of the kidney the same flat-like bodies are recognised, but the matrix here presents great difficulties in the determination of its fibrillated or non-fibrillated structure. As regards the corneal tissue, the writer directs attention to the ambiguous term corneal corpuscles, as lately employed, and proceeds to show that the corneal tissue really consists of irregularly shaped corpuscles in well defined areas, the corneal spaces of Recklinghausen; that these spaces may intercommunicate by their radiating processes, and that the intercellular material is generally regarded as separable into distinct fibrils. The writer relegates to a separate list the elastic tissues on the grounds of their dissimilarity to the tissues previously considered, in both their microscopical and their chemical nature. Excluding the elastic tissues, the writer next takes in review the elementary constituents which determine the affinity between the diversified structures included under the term connective. The flattened, plate-like cell is minutely described, and the special value of logwood in its demonstration is alluded to. Heitzmann's theory with regard to the connection of connective corpuscles by their radiating extensions is shown to be subject to numerous exceptions. The second element—the lymphoid corpuscle—is described as pale, uncoloured by hæmatoxylin, and often closely connected with the plate-like corpuscles. With these are found cells four or five times as large as the lymphoid bodies, with oily contents. The writer regards the plate-like bodies as forming a partial investing sheath for the fibre-bundles, the processes of the former frequently anastomosing. He differs from the views of Klein with regard to adenoid tissue being formed of 'netted cells.'

The developmental history is next traced out, ob-

jection being taken to the free use of the term spindle-cell. This term is stated to be applied frequently to connective bodies which are really but thin ribbon-like portions of intercellular substance, upon which a flattened corpuscle is often seen, which may be displaced by pressure on the cover-glass. The so-called spindle-cells of some fibro-recurrent tumours are thus explained. The stages of corpuscular development begin with the round body soon becoming flattened and possessing a broad envelope. An external delicate investment now forms the starting-point for the intercellular growth. The plate-like bodies can at first be brushed out of their niches, but, eventually they become smaller, disposed in rows, whilst their envelopes shrink and recede from each other as fibrillation proceeds. The paper, which forms but the second part of a communication made to the Biological Section of the New York Academy of Sciences, is illustrated by several plates of the structures described.

BEVAN LEWIS, L.R.C.P. Lond.

TURNER ON THE PLACENTATION OF THE CAPE ANT-EATER.—Professor Turner (*Journal of Anatomy and Physiology*, vol. x. part iv.), finds that the placenta of orycteropus is not discoidal, as described by Professor Huxley in his *Introduction to Classification*, but zonary, as in the carnivora, pinnipedia, hyrax, and elephas. It differs from these, however, by occupying a relatively larger extent of the whole length of the chorion and uterus. In the bitch and cat the placenta occupies about one-fourth; whereas in orycteropus it occupies a half or more of the uterus and chorion. The inner surface of this broad and nearly uniform band is, as in the grey seal, convoluted; and its margins are overlapped from a quarter of an inch to an inch by the uterine mucous membrane.

The umbilical cord is made up of two veins, two arteries, and in the centre a fine tube, believed by Professor Turner to be the undoubted remains of the allantois. The vessels are not only distributed to the placental part of the chorion, but numerous branches pass to the non-placental area, and form there a dense capillary plexus.

The two specimens having been long in spirit, it was impossible to make out whether the placenta is deciduate or non-deciduate. In one of them the placenta was easily separated from the uterine wall. The external surface was less convoluted than the internal, and the part of the chorion from which it was removed had a velvety appearance; but differed from the chorion of the mare in having the villi more uniformly diffused in sinuous ridges.

On a more minute examination, amongst other points of interest Professor Turner was able to make out the glands and crypts of the uterine mucous membrane—the crypts, as in many other mammals, greatly exceeding in number the glands. The paper concludes by alluding to the fact that in the edentata there are examples of every form of placentation except the cotyledonary. J. C. EWART, M.B.

CURSCHMANN ON THE RELATION OF THE SEMI-CIRCULAR CANALS TO THE BODILY EQUILIBRIUM. H. Curschmann (*Archiv für Psychiatrie* Band v. and *Centralblatt für die Medicinischen Wissenschaften*, no. 21) experimented on pigeons. The anatomy of these structures, and the method of operating, are to be found in the original. It is to be specially noticed that Curschmann, in operating, tried to avoid as

much as possible injury to the bones of the skull and the osseous canals, and only to destroy the membranous canals.

If on one side a large piece or the whole of a horizontal canal be destroyed, as long as the animal is at rest nothing special is to be observed; but the animal is more sluggish and is not able to fly. If the animal be made to move, it makes a circle towards the opposite side. Further, irregularity in the use of the left leg is detected, which is placed down awkwardly. The animal is also awkward in feeding. Nothing abnormal is noticed regarding the position of the eyes. Further investigations showed that the muscular force on the injured side was unimpaired; but the capacity for co-ordination appeared to be affected on the one side. The better co-ordinated muscles of the intact side, when the animal moves, exert their superiority and incline the animal to the affected side. There is no internal impulse to these movements.

If the horizontal canal be destroyed on both sides, even then nothing beyond a little sluggishness is to be observed. In moving, however, the animals (which when at rest keep the head quite steady) execute circles first to the one side and then to the other. Then the head begins to move in a horizontal direction from one side to the other. To take food is, under these circumstances, impossible. The abnormal position and movement of the head and the disturbance in the equilibrium of the body are co-ordinated, but the former are not the cause of the latter. The capacity of flying is quite lost in such animals; the proper muscular force of the wings however is intact. If only section of one horizontal canal be practised, the symptoms are only distinguished in degree from those of the severer operation; they gradually become less perceptible, and at the end of the first week may have disappeared entirely.

The results of injuries to both vertical canals are essentially the same. In extensive destruction of the canals on both sides, the animals when at rest are extraordinarily sluggish; while moving, the body vibrates first forward then backward; they do not run in a circle, but run rapidly forwards, and then equally so backwards, and fall forwards. In moving forwards powerful efforts are made to prevent the falling forwards. In such movements, the head vibrates from above downwards; the peculiar torsion of the head described by Goltz also occurs, but is not constant, and the author shows that it is to be ascribed to injury of the dura or cerebellum. That the disturbance in the equilibrium of the body is caused by the abnormal position of the head, as maintained by Goltz, is rejected by the author, for in unilateral lesion of the canals the head exhibits no movements, whilst they appear characteristically in the body. It is also to be noticed that, after one of the vertical canals was injured on both sides, a diminution of the pathological phenomena occurred in two experiments, which never occurred in bilateral injury of both horizontal canals.

On injuring only the vertical canal on one side, the phenomena are few. The position of the head and body at rest are normal; that of the head is not even changed during movement; the capacity for flying is relatively little interfered with. In running, the foot of the operated side is awkward; some animals fall forward or backward, but generally with a tendency to stumble towards the injured side. The phenomena may all disappear early and completely.

If all three canals be destroyed on one side, little

abnormal is observed during rest; while running there is a combination of *mouvements de manège* and oscillations of the body forwards and backwards.

In bilateral destruction of all three canals the movements are quite irregular, and the head is tossed in an irregular manner in a circular direction. While sitting at rest, the position of the head and body are again normal; so that, even after complete destruction of all the membranous canals, complete loss of the bodily equilibrium does not ensue, nor is hearing thereby abolished.

RECENT PAPERS.

On some Animal Electric Currents: Experiments on the Living Man. By Dr. E. Sciamanna. (*Lo Sperimentale*, Nov.)
Researches on the Existence of Lymphatic Canals in the Internal Tunic of the Human Aorta. By M. Stroganow. (*Archives de Physiologie*, July and Aug., 1876.)

PATHOLOGY.

MITCHELL ON LOCAL INJURIES TO NERVES AND THEIR TROPHIC CONSEQUENCES.—At the meeting of the Philadelphia College of Physicians on May 3, 1876, Dr. Weir Mitchell read a paper, which appears in the ninth volume of their *Transactions*, pp. 115-138, illustrated with a chromolithograph and twelve diagrams. Case 1 he regards as almost unique. It was given him by Dr. Crawford of Wilkesbarre. James Graham, a night watchman, was wounded by the accidental discharge of a pistol, January 29, 1871. The ball entered the front of the arm, passing obliquely downwards and backwards through the belly of the biceps, and made its exit at the back of the limb, $1\frac{1}{2}$ inches nearer the elbow than its point of entrance. Profuse hæmorrhage was controlled by pressure. He did well till February 9, when secondary hæmorrhage occurred. Pressure stopped it till next day, and acupuncture for eight days more, but twenty-four hours after removing the needle he bled again. An incision at the point of entrance revealed a false aneurism of the size of a hen's egg, on the brachial artery, from a small wound in its posterior aspect, communicating with the (shot) wound. It was emptied, and the artery ligatured above and below. Slight numbness of the fore-arm and hand had been noticed from the very first. This and the pain steadily increased. Abscesses formed, and he died of pyæmia on the forty-ninth day (March 19); the surroundings were very unfavourable to health. Examined after death, the brachial artery had become closed above and below, but the anastomotic circulation was never properly established. The surface of the humerus was found to be denuded of its periosteum for an inch or more in extent, at a point corresponding to the line of the wound, and a portion of the bone had evidently been detached. No appearance of repair could be seen. A longitudinal portion of bone was found attached to the sheath of the median nerve, at a point in close proximity to the original wound. A portion of this bony mass, with the nerve attached to it was exhibited. One end ($\frac{1}{3}$ inch long) was removed in making a section for the microscope. It was found that the bone was firmly attached to the nerve-sheath, and a microscopic section gave evidence that this fragment of bone was in process of growth (the comparative size of the canaliculi, those near the surface being larger than those near the centre, seems to warrant this). Verneuil (page 112

of Dr. Mitchell's book on 'Injuries of Nerves') reports a case of a fragment of periosteum carried away by a ball, and lodging on a nerve, where it developed bone. (See also page 216, for wound of the inframaxillary branch of the fifth nerve by splints of bone from gunshot wound.) The next case (Case 2 of this series) is one of injury to the ulnar, radial, and median nerves by a compound fracture of the forearm, in a boy aged nine, close to the elbow. On February 27, 1874, nearly eight months afterwards, there was a cicatrix four inches long down the middle of the forearm. Extension of the forearm was limited one half; pronation and supination were lost; the wrist-motions were lessened by joint-lesions and loss of power. The fingers were set in the form of a claw, with slight power to extend the second and third phalanges, but no other motion. Sensation to touch was entirely lost in the median territories, deficient in the ulnar region, and altered in the radial region. The face of the lower half of the forearm was hyperalgesic here, as in the whole palm, parts of the fingers, and over most of the dorsum; every touch was felt as pain of a burning character. There was also a constant torment of similar kind. The hand-muscles were wasted, and the thumbs rotated outwards, so that the nail lay in the same plane with the finger-nails. The whole hand, especially the fingers, was dusky red, swollen, and as smooth and glossy as if polished. [Sir James Paget appears to have been one of the first to call attention to this smooth glossiness of skin in nerve-lesions.—*Rep.*] The nails were curved like turtle-shells in all directions, roughened, dark, and elevated, as if by the overgrowth of subjacent tissues; the matrix in all of them was separated from the nail, and ulcerated. On the back of the hand was an irregular stellate deficiency of pigment, not due to original defect or to a scar. The hand and fingers were blistered by successive blisters, to remove tenderness. Then faradisation and *massée*-ing the hand, and cautious moving of the joints effected, in a year, an almost perfect cure. This is the case to which the coloured picture belongs. Five cases of injuries to the median nerve, with diagrams of the tactile sensibility, are also given; complete loss of sensibility is shown in deep, almost black shading, and a partial loss in lighter shading, whilst the distances are expressed in parts of an inch. In some of these cases bullæ, ending in deep ulcers with well-defined edges, formed (Cases 3, 4, 5). In another case an abscess resulted. 'We may have,' says Dr. Mitchell, 'from injuries seemingly alike, joint-diseases, or glossy skin, or herpetic eruptions, or circumscribed blisters, or deep ulcers, or altered nails, œdema, atrophy, or hypertrophy. The circumstances which regulate the production of these several pathological states are as yet unknown to us. At present we can only confess our ignorance.' [The reporter has noticed that the finger-nails of patients suffering from general paralysis of the insane have in several instances been affected in the way described by Dr. Mitchell. There has, however, been some doubt, in most of the cases, whether it were simply a nerve-lesion, or due more or less directly to syphilis.—*Rep.*]

W. BATHURST WOODMAN.

RECENT PAPERS.

Voice without Vocal Cords. By Dr. Jelenffy. (*Wiener Medizinische Wochenschrift*, Nov. 10 and 18.)
Primary Cancer of Kidneys: Secondary Deposits in almost

- all other Organs : Latent Course. By Dr. R. Hausmann. (*Berliner Klinische Wochenschrift*, Nov. 6.)
- Miliary Tuberculosis of the Pharynx. By Dr. B. Fränkel. (*Ibid.* Nov. 13 and 20.)
- Histological Examination of a Case of Encephaloid Cancer of the Lung, Epithelioma. By M. L. Malassez. (*Archives de Physiologie*, July and Aug.)
- The Urine and the Liver ; Variations in the Quantity of Urine eliminated in Disease of the Liver. By M. P. Brouardel. (*Ibid.*)
- Cystic Hæmatoma of the Spleen. By M. P. Spillmann. (*Ibid.*)
- Muscular Atrophy and Paraplegia in a Case of Premature Malignant Syphilis. (*Ibid.*)

MEDICINE.

DOLORIS ON A CASE OF THROMBOSIS OF THE ANTERIOR CORONARY ARTERY, WITH RUPTURE OF THE HEART.—At one of the meetings of the Anatomical Society of Paris in June last, M. Doloris read the following case, which was under the care of M. Bouchard at Bicêtre. (*Progrès Médical*, Nov. 11). A patient, aged seventy-five, was admitted on May 27. On admission he was in a semi-delirious state, which prevented any clear history from being obtained ; he complained only of a vague pain in the epigastric region, spreading from the base of the thorax towards the hypochondriac regions ; the pain was increased by movement, and this increase of pain was accompanied by dyspnœa. At the time of admission the pain was not great ; the patient, perhaps on account of his semi-delirious condition, complained little, and pressure caused little distress. The face was flushed, the pulse small and frequent, the radial artery atheromatous, the temperature normal to the hand, the tongue moist.

Auscultation of the chest gave signs of chronic bronchial catarrh ; in the heart were heard bruits, distant, not well marked, and remarkably irregular ; a series of rapid beatings was succeeded by a series of very slow ones. In fact the symptoms were those of an old heart, whose orifices were altered and whose action was affected by degeneration of tissue. Percussion gave increased dullness in the cardiac region, leading to the supposition of hypertrophy, which agreed well with the presumed lesions on the one hand and with the chronic respiratory trouble on the other.

Retrospective information gleaned from different sources enabled the history to be completed. The attack commenced about eight days before, and was marked simply by pain ; nothing particular was heard about the heart by the 'interne' who was called, except some irregularity and a little hypertrophy. In the course of the day the pain became less, but towards evening syncope came on. From this time the appetite diminished, pain appeared from time to time as a very uneasy oppression in the epigastric region, but the patient did not keep his room during the eight days following the attack. The evening of his admission he was seized with delirium. The 'interne' found nothing very serious about the heart or lungs ; there was a kind of malaise and generally ill-defined discomfort. The temperature was plainly febrile. The patient was admitted, and was found at the evening visit in the condition previously mentioned. During the whole of the night the pain was violent and the delirium intense. In the morning slightly calmer, but still marked agitation all the next day (May 28). During the next night pain and dyspnœa reappeared,

with increased delirium. The patient talked incoherently, constantly changed his position, and wanted to get up.

May 29.—He complained less, and seemed better. About eight o'clock in the evening the patient died suddenly.

Necropsy.—The stomach was very much thinned about the greater curvature ; it was of reddish colour, with softening of the mucous membrane. The lungs were healthy, slightly diminished in volume, apparently from compression ; there was some bronchial dilatation, and chronic inflammation of the bronchial mucous membrane. In the kidneys was some fatty degeneration. In the encephalon, multiple lesions were disseminated in the motor centres, cortical portion, etc. An enormous blood-clot entirely filled the pericardial cavity ; externally the clot appeared homogeneous, smooth, and adherent only at a few points to the parietal surface of the pericardium. At these points there existed on the surface of the serous membrane a thickish, yellow, somewhat adherent exudation, composed of fibrine and some nuclei ; around and below the exudation the pericardium was injected. On the cardiac aspect the clot was lined by a thick false membrane, not adherent to the cardiac wall, and entirely composed of fibrine. The visceral pericardium was inflamed in places, and was lined with a layer of fatty tissue. At the level of the apex of the heart, on the left edge, was a linear rupture extending obliquely from above downwards, and from left to right. This tear occupied the whole thickness of the cardiac wall ; all around the cardiac tissue was blackened and softened, and the muscular fibres were inflamed. Examined from the ventricle, the rupture appeared only as having raised a kind of clot forming a sort of mouth in the conical extremity of the left ventricle. Around the internal clot the cardiac tissue was softened.

On dissecting the anterior coronary artery, there was found, at a point corresponding to the infiltrated zone, an arterial branch about two millimètres thick, obliterated for a length of seven or eight millimètres by a hard thrombus of a yellowish white colour, which completely filled the vessel. The thrombus appeared to be composed entirely of fibrine.

Remarks.—In the existence of this clot and the obliteration of so considerable an arterial branch we find the explanation of the cardiac softening and rupture. How and when was this rupture produced ? The organisation of a part of the interpericardiac clot, and the traces of inflammation of the serous membrane, seem to say that the rupture did not take place all at once, and that it commenced on the outer surface of the heart, whilst the internal surface sustained on the ventricular aspect by the internal clot, produced by surrounding myocarditis, was broken by a last effort which marked the moment of death. Did the syncope correspond with the period of formation of the thrombus ? Probably.

W. DOUGLAS HEMMING.

HAMILTON ON NEUROSES FOLLOWING ZYMOTIC FEVERS.—Dr. Hamilton, of New York, draws attention, in a communication to the *New York Medical Record* for October 28, 1876, to the chronic nervous affections which not unfrequently follow variola (including varioloid and varicella) and cerebro-spinal meningitis, and to the permanent muscular contractions, tremors, pareses, and mental weakness which occur as sequelæ of scarlatina and other fevers. Cases of neuralgia and more or less general paralysis

are cited from other writers, and several original ones are added, including one of partial paraplegia in a young man after an attack of enteric fever, in which the author recommended iodide of potassium in addition to ergot and the use of the actual cautery. With respect to the treatment of these post-febrile neuroses, he adds, 'very little can be done. I have great faith in iodide of potassium and belladonna. The actual cautery, not used superficially, but for the production of ulcers on the back of the neck and between the shoulders, sometimes relieves the patient, but at best the improvement will be of short duration in the majority of cases.' [With less energetic treatment a more favourable prognosis seems justified by experience in this country.] Dr. Hamilton refers particularly to Dr. Edward Long Fox's work on the pathological anatomy of the nervous centres, and concludes with the following list of writers on the subject, to which may be added those of Vulpian, Westphal, and Lockhart Clarke, also quoted by the author, and well known in this country: Gallup, 'Sketches of Epidemic Diseases in the State of Vermont,' etc., Boston, 1815; *American Psychological Journal*, May, 1876; *Chicago Journal of Mental and Nervous Diseases*, vol. i. p. 171; E. L. Fox, 'Pathological Anatomy of Nerve Centres,' pp. 360, 371, 372; Goss, *Boston Medical and Surgical Journal*, May 8, 1873; J. J. Putnam, *ibid.* August 7, 1873; Webber, *ibid.* May 22, 1873; Eulenburg, 'Funktionelle Krankheiten,' Berlin, 1871; Rosenthal, 'Nervenkrankheiten,' Erlangen, 1870; *Berliner Klinische Wochenschrift*, November 18, 1872; *Allgemeine Medicinische Zeitung*, December 7, 1872; Schmidt's *Fahrbücher*, No. I., 1873; *Centralblatt für die Med. Wiss.*, February 15, 1873; *Archives de Phys. Norm. et Path.*, January, 1873; Troussseau, 'Clinical Medicine,' translation of third edition, vol. i. p. 66.

P. W. PYE SMITH, M.D.

RECENT PAPERS.

- Observations on Pulmonary Diseases. By Dr. C. Gerhardt (*Wiener Medicinische Wochenschrift*, Nov. 18.)
 On Recurrent Typhus. By Dr. E. Schill. (*Deutsche Medicinische Wochenschrift*, Nov. 11, 18, and 25.)
 Diphtheritic Angina in Belgiojoso in 1875-76. By Dr. G. Casali. (*Gazzetta Medica Italiana-Lombardia*, Nov. 4 and 11.)
 The Symptoms of Narrowing of the Greater Air-Passages. By Dr. Riegel. (*Berliner Klinische Wochenschrift*, Nov. 20.)
 Note on a Case of Renal Tuberculosis. By M. Biot. (*Lyon Medical*, Nov. 19.)
 Clinical Study on the Treatment of Pleuritic Effusions by Aspiratory Puncture. By Dr. Vidal. (*ibid.*)
 On Spasmodic Dorsal Tabes. By M. Charcot. (*Le Progrès Medical*, Nov. 18.)
 A Case of Hysteric Epilepsy. By M. Charcot. (*Gazette des Hôpitaux*, Nov. 18.)
 New Cases Illustrating the Reciprocal Influence of Rheumatism and Traumatic Lesion. By M. Potain. (*La France Médicale*, Nov. 18.)
 On Albuminuria in Lymphangitis. By M. Trélat. (*Gazette des Hôpitaux*, Nov. 9.)
 On the Epidemic of Tetanus at Gentilly. By M. J. Simon. (*Le Progrès Medical*, Dec. 2, 1876.)
 On Trembling, in Parkinson's Disease (Paralysis agitans). By M. Charcot. (*Le Progrès Medical*, Dec. 2.)
 On the Mechanical Treatment of a Sequel of Pleuropneumonia. By Dr. von Mosengeil. (*Berliner Klinische Wochenschrift*, Nov. 27.)
 On Miliary Tubercle of the Pharynx. By Dr. B. Fränkel. (*ibid.* Nov. 13 and 20.)
 Contributions to the Study of Athetosis. By Dr. M. Bernhardt. (*Deutsche Medicinische Wochenschrift*, Dec. 2.)
 Ligature of the Common Carotid Artery for the Cure of Tic-

Douloureux. By Dr. Patruban. (*Allgemeine Wiener Medicinische Zeitung*, Nov. 28.)
 Clinical Symptoms and Treatment of Medullary Leukæmia. By Dr. Mosler. (*Berliner Klinische Wochenschrift*, Dec. 4 and 11.)

DISEASES OF CHILDREN.

APPENRODT ON PURPURA HÆMORRHAGICA IN EARLY INFANCY.—Two cases of this disease, attacking children in the first year of life, are recorded in the *Deutsche Medicinische Wochenschrift* for September 30. The hygienic conditions appear to have been good in both. The first case occurred in a very rachitic child, aged twelve months. The eruption appeared in one night, and involved every part of the skin, except the soles and palms. The mucous membrane of the mouth and conjunctiva remained free. On the next day, the motions were blackened. On the seventh day the spots disappeared as suddenly as they had come. Recovery was complete. The second case was that of a well nourished child aged nine months. When but fourteen days old, he was attacked with whooping cough, which lasted fifteen weeks. He had been under treatment about a month for 'inward convulsions,' when suddenly, on May 9, epistaxis, hæmatemesis, and purpura set in. The eruption showed itself in the same parts as in the other case; but, with the addition of the lips, gums, tongue, palate, and pharynx. The urine was said to have been red. The child was semi-comatose, but groaned when moved; the eyes were half opened and directed upwards; pulse and respiration quickened. On May 11 the child had not slept; it groaned frequently; the body was drawn up. The breast was still taken eagerly. The urine was blood red, but without clots. The stools were blackish green (the child had taken calomel). The spots were more numerous. Pulse 144, soft and full. On May 12 the child was much the same, but more restless; by the evening, many of the spots had disappeared. They were no longer visible on the mucous membrane. Pulse small, 168; temperature, 103.5. Death took place at three o'clock the next morning, after evacuation of a large quantity of clear urine. The examination *post mortem* was limited to the abdominal cavity. The intestines were pale; the mesenteric glands were much swollen, and of a blood-red colour. There was a little blood-stained serum in the peritoneal sac. The mucous membrane of the intestines was covered with ecchymoses of the size of a pea and under; the solitary follicles were swollen; Peyer's patches were infiltrated. The kidneys were studded with hæmorrhages in both medullary and cortical portions; there were none in the liver or spleen. The treatment consisted in the administration of quinine and acids. Not the least remarkable point about the cases was the sudden appearance and disappearance of the eruption, more especially as the latter was unmarked by any preliminary changes of colour.

RALPH W. LEFTWICH, M.D.

LINCOLN ON AN EPITHELIAL CAST FROM THE ŒSOPHAGUS.—At a meeting of the Boston Society for Medical Observation (*Boston Medical and Surgical Journal*, October 19), Dr. Lincoln reported the case of a boy, aged nine years, who vomited an epithelial cast of the lining of the œsophagus. The boy had not been dyspeptic. On May 24 he had an

attack of catarrh of the fauces and right Eustachian tube, which subsided in a few days without doing mischief. On May 29 he was attacked by pains in the right great toe and ankle, and in the left knee, which, he said, were like those he had suffered last year in a long and severe attack of articular rheumatism. The fever was not high. Salicylic acid in three-grain pills was given every hour, and on the 31st, in the morning, having taken thirty-one of these pills, his pains had entirely left him. But at eleven A.M. he began to bleed at the nose a little; in five minutes or so he vomited a gill or two of blood, dark, with some clots, and a very little food, containing a clot seven inches long, of the size of the boy's finger, in close union with which was a cylindrical substance, reminding one of a croupy false membrane; the cylinder was complete in some parts, torn in others. The vomiting and epistaxis were easily arrested; there was no further systemic or local disturbance of any sort, and the boy recovered.

The only local complaint during the use of the salicylic acid was that of a dull feeling of pressure in the stomach.

There had been since last year a loud apex-murmur with the first beat of the heart.

Dr. Fitz described the specimen as consisting of the desquamated superficial layer of the œsophagus, the blood-clot being closely entangled with it. There was none of the papillary layer present, so that no ulcerated surface remained.

RECENT PAPERS.

Hydrocele in Infancy. By Dr. A. Gherini. (*Gazzetta Medica Italiana-Lombardia*, Nov. 18.)

On the Dyspepsia of Infants. By Dr. Jules Simon. (*L'Union Médicale*, Oct. 31.)

Contributions to the Treatment of Children's Diseases. By Dr. H. Abelin. (*Nordiskt Medicin. Arkiv*, Band viii.)

SURGERY.

WAITZ ON DORSAL DISLOCATION OF THE THUMB.—Dr. H. Waitz, of Kiel, reports in the *Berliner Klinische Wochenschrift*, no. 44, 1876, two cases of dislocation of the thumb treated by Esmarch, and advocates, as a means of favouring reduction in very obstinate forms, exposure of the joint by an incision. Through such a proceeding the surgeon may be able to discover the obstacle to reduction, and to remove it. For the success of the operation, the application of Esmarch's apparatus for rendering parts bloodless is necessary, and the dangers of exposure of the joint must be avoided by the use of Lister's spray and antiseptic dressings. The subject of the first reported case was a man aged twenty-nine years, who applied to Esmarch with a recent dorsal dislocation of the left thumb, complicated by a transverse gaping wound in front of the injured joint. Attempts to effect reduction by manipulation having failed, the thumb was rendered bloodless, and the injured parts closely examined through the wound. The tendon of the long flexor of the thumb was quite loose, and could not have prevented reduction. The capsule of the joint had been partly lacerated, and the neck of the metacarpal bone was closely surrounded by a 'button-hole' slit in this membrane. The opposite margins of this slit having been first incised and afterwards held apart by small blunt hooks, the

phalanx could at once be readily pulled to its normal position. The wound was washed out with a weak solution of carbolic acid and dressed antiseptically. Healing took place without signs of any local reaction, and on the fourteenth day the mobility and proper functions of the thumb had been restored. This case, the author states, presented two points of interest. An examination of the interior of the injured joint had led to a removal of the obstacle to reduction, which would otherwise have proved insuperable. The healing process was carried on rapidly and without reaction, and the mobility of the thumb was quite restored, in consequence, it is assumed, of the use of Lister's antiseptic dressings. A case of simple dislocation of the thumb is reported by the author, in order to show the good results of a new plan of treatment, suggested by the facts of the first case. Lucke, in a paper on dislocation of the thumb, had recommended in 1871, as a last resource when ordinary attempts at reduction had failed, incision into the joint and direct removal of the obstacle. Dr. Waitz had not met with any record of a case in which this advice had been followed, but he held that it was perfectly justifiable to have recourse to such a plan of treatment, considering that the subsequent dangers could be much reduced, or even altogether avoided, by the application of antiseptic dressings. The subject of the case in which this treatment was carried out was a man, aged seventeen years, who came to Dr. Esmarch with a simple dorsal dislocation of the right thumb, caused ten days previously by a fall. All other attempts at reduction having failed, the injured thumb was rendered bloodless, and a transverse incision made in front over the prominent head of the metacarpal bone. The capsule, as in the former case, was found to have been torn, and the neck of the metacarpal bone was closely gripped by the slit. Incision and separation of the margins of this slit did not, however, help reduction, which, after closer examination, was found to be prevented by interposition of the tendon of the long flexor muscle between the head of the metacarpal bone and the base of the first phalanx. This tendon having been raised by means of a small blunt hook, reduction was easily effected. The operation was performed whilst the injured part was under the carbolic acid spray, and Lister's dressings were subsequently applied. The wound healed rapidly, and one month after the operation the patient had good use of his right thumb.

The difficulty in effecting reduction in the first case was due to a 'button-hole' laceration of the capsule, which girt the neck of the metacarpal bone so closely that a release of this bone could not take place without an artificial enlarging of the slit. This condition is produced, according to Petersen, by the following mechanism; when the margins of the slit have arrived at the back of the head of the metacarpal bone, contraction takes place of the muscles connected with the adjacent sesamoid bones, viz., the adductor and the ulnar insertion of the short flexor on the one hand, and the abductor and the radial head of the short flexor on the other hand. The margins of the slit are thus drawn well over the head of the bone, and an almost complete interposition is brought about of the capsule between the metacarpal bone and the base of the first phalanx. This condition, by reason of the elasticity of the muscles, cannot readily be removed even on the administration of chloroform. In Dr. Esmarch's case the head of the metacarpal bone was set free

after incision into the joint, but the margins of the slit in the capsule encircled the bone so closely that it was necessary not only to cut the margins of the slit, but also to separate them further by means of blunt hooks. Reduction in the second case was hindered through interposition of the tendon of the long flexor of the thumb. This condition has been thus explained by Spitzer: the tendon of the long flexor being closely bound down to the first phalanx of the thumb, by means of tough fibrous tissue, must be carried along with this bone in any direction that it may be forced. In dislocation, the tendon, according to Spitzer, is always thus carried away; when there is but slight displacement of the phalanx, it lies alongside of the head of the metacarpal bone; when the displacement is considerable it becomes interposed between the head of the metacarpal bone and the base of the first phalanx. Waitz does not accept this view, and is disposed to think that displacement of the tendon of the long flexor in connection with dislocation of the phalanx, occurs in those cases only where the injury has been caused by a fall or blow on the inner surface of the thumb. In the former of the above reported cases, the tendon of the long flexor was seen in its normal position over the middle of the head and neck of the metacarpal bone. In conclusion, it is stated that where dorsal dislocation of the thumb cannot be reduced through ordinary means, in consequence of interposition of capsular ligament, or of the tendon of the long flexor, an incision into the joint, and direct removal of the obstruction, is preferable to any other operative treatment, provided that antiseptic dressings be used.

BECKER ON THE TREATMENT OF PSEUDARTHROSIS.—Dr. Becker, of Munich, in a communication to the *Aerztliches Intelligenz-Blatt*, no. 41, 1876, advocates as a plan of treating ununited fracture, the subcutaneous injection into the false joint of a weak solution of carbolic acid. In the treatment of pseudarthrosis, it is necessary, the author points out, to establish such a degree of inflammatory action, that the limits of plastic exudation may not be overstepped, and that suppuration may not result. The usual therapeutical measures may be divided into two classes: one class being of those which may be fairly regarded as free from danger, but which are seldom efficacious; the other of those which, though they offer a very good chance of success, often put the life of the patient in jeopardy. The dangers consist in excess of inflammatory action, as suppurative ostitis, osteomyelitis, and periostitis. Among the non-heroic plans of treatment may be classed the application of tincture of iodine, blisters, etc., to the surface of the limb at the seat of injury. The action of such irritants must be very slight in deep-seated parts and troublesome dermatitis may by these be readily produced. Acupuncture, according to the author, usually fails to set up the necessary degree of irritation. The introduction of a seton in the false joint may be regarded as an heroic measure, as it may excite profuse suppuration. Forcible rupture of the false joint and rubbing together of the ends of the fragments, may be regarded as the mildest of the heroic methods; but it may result in nothing more than annihilation of all the results of previous treatment. The cases in which this method may be tried with fair prospect of success, are those where but one bone has been fractured, where there is much displacement of the fragments, and where

the connecting bond of fibrous tissue between these bones is thick. The plans of boring the ends of the bones and introducing foreign bodies, as ivory pegs, steel screws, etc., are dangerous, on account of the probable result of suppurative ostitis. Resection of the joint, from the fact that it establishes the constitutions of a compound fracture, must be regarded as a dangerous operation.

A case is reported by Dr. Becker of a man who had received a compound oblique fracture of both bones of the left leg, at the junction of the middle and upper thirds. At the end of the third month from the date of injury, the fragments of the fibula had united, but at the seat of the fracture in the tibia there was angular distortion and much mobility, and no osseous thickening or deposit of callus had taken place at the ends of the tibial fragments. Forcible friction of the ends of the fragments having been tried, and also prolonged retention of the limb in a gypsum splint, without any good results, Dr. Becker considered how he might set up in the newly formed connective tissue of the pseudarthrosis just such a degree of irritative action that might result in plastic effusion from the ends of the fragments and consequent development of bone and firm union. As a means of directly attacking the tissues of the false joint, it occurred that the use of a Pravaz's syringe would be suitable, and as a mild irritant fluid, a weak solution of carbolic acid was selected. From the results of Hueter's researches on the injection of carbolic acid into inflamed tissues, it was assumed by Dr. Becker that this agent would produce good results when injected into bones. It destroys septic irritants, and is an unlikely agent to set up suppuration. The injured limb having been fixed in a fenestrated gypsum splint, a small quantity of a 3 per cent. solution of carbolic acid was injected between the ends of the fragments of the broken tibia. As no evident result had been produced by this proceeding, a 4 per cent. solution was subsequently injected. This caused no local pain or constitutional disturbance, but set up some inflammatory cedema in the soft parts over the false-joint. During the following sixteen days the injections were repeated on four occasions, and on the seventeenth day periosteal thickening could be distinctly felt at the end of the lower fragment. One week later the gypsum splint was removed, and then it was found that the fragments were firmly united. Eight days later there was an abundant deposit of callus on both the anterior and posterior surfaces of the tibia, and at the end of another month there was firm osseous union, and the patient could walk well with the support of a stick.

DOLLMAYR ON RETENTION OF URINE IN FEMALES.—Dr. Dollmayr, of Vienna, directs attention, in the *Medicinischo-Chirurgisches Centralblatt*, no. 40, 1876, to what he believes to be a frequent though seldom recognised cause of retention of urine in females. The form of retention to which the author alluded is only met with, he states, in subjects of advanced age and in those who have long ceased to menstruate. The first indication of the urinary disturbance is a burning sensation at the external meatus during micturition, slight at first, but gradually extending and increasing in intensity, so that the patient soon, whilst passing urine, feels as if a red-hot needle were lodged in the whole course of the urethra. The stream of urine becomes smaller, and at last there is much difficulty in re-

lieving the bladder. If, in an extreme case of this kind a close examination be made of the external urethral orifice, this will be found blocked up by small ruddy excrescences which bleed freely when touched. This condition the author is disposed to attribute to continued inflammatory action set up in the mucous membrane of the urethra by some local cause, the result of such action being polypoid thickening of the membrane. The excrescences may be speedily destroyed by the application of nitrate of silver or sulphate of copper, and then the urethral pains and the difficulty in micturition will at once disappear. In conclusion, the author insists on the necessity, in cases of retention of urine in the female, of submitting the urethra to close examination.

KÜPPER ON HÆMORRHAGE AFTER THE APPLICATION OF ESMARCH'S METHOD.—Dr. Küpper, of Elberfeld, points out (*Deutsche Medicinische Wochenschrift*, no. 43, 1876) that Esmarch's plan of arresting hæmorrhage during surgical operation is attended with one serious disadvantage. When the large vessels have been tied, and the elastic ligature has been removed, there is usually free and prolonged bleeding from many small branches, so that the surgeon is often compelled to tie twice or thrice the number of vessels that he need have tied had Esmarch's apparatus not been used. When the antiseptic spray and dressings are used, this bleeding is especially disadvantageous. The application of Esmarch's apparatus to a limb is followed, as is well known, after removal of the elastic ligature, by intense redness of the skin, and by increase of temperature in parts below the seat of compression. From the analogy of these phenomena to those presented by the external ear of an animal after division of the cervical portion of the sympathetic, the author has been led to the conclusion that the application of Esmarch's apparatus causes paralysis of the arterial muscular tissue, either by direct action on this tissue or by indirect action on its nerves. The less the contraction of the muscle, the greater remains the lumen of the vessel, so that a thrombus is not so readily formed. Cold arrests hæmorrhage, because it excites vigorous contraction of the muscle, whilst warmth by relaxing this tissue favours loss of blood. The author proposes, as a means of preventing hæmorrhage due to paralysis of arterial muscular tissue, the application of a strong induced current, one pole being placed at some distance from the seat of operation, the other on the surface of the wound, and in direct contact with the divided vessels and nerves. A case is reported, in which this proceeding was practised with the expected result.

CRUSSARD ON INGUINAL ADENITIS SIMULATING STRANGULATED FEMORAL HERNIA.—Dr. Crussard, of Neufchâteau, reports in the *Revue Médicale de l'Est*, no. 5, 1876, a case of acute inguinal adenitis, complicated by symptoms of intestinal strangulation. That difficulty might occur in distinguishing between an inflamed inguinal gland and a strangulated hernia was recognised by Boyer and Nélaton, who, allowing that constipation and vomiting were very rare symptoms in association with adenitis, took care to point out that, when these complications were present, certainty in diagnosis often became impossible. The author has brought forward his case for the purpose of throwing some light upon this difficult point in practical surgery.

The question discussed by the author in some remarks on his case is thus stated: 'There being given a tumour in the fold of the groin, which has existed for several days, presents all the signs of an inflamed femoral hernia, and is accompanied by the characteristic symptoms of strangulation—the subject of this tumour having long suffered from hernia in the same region—to determine whether the tumour be a strangulated hernia or simply an inflamed gland.' In considering this important question, the surgeon may be best guided by his previous knowledge of the tumour or, failing this, by the patient's own report as to its previous form, size, and consistency. In the absence of any report as to the former condition of the swelling, the diagnostic difficulty will, the author thinks, always remain very great. This communication contains the following general conclusions. 1. Inguinal adenitis may, in certain instances, simulate strangulated femoral hernia. 2. The diagnosis is simple if the patient have a recent hernia, and be seen in good time; unnecessary if the surgeon be not called in before the development of manifest fluctuation which demands the same operation; of great importance and attended with much difficulty if the patient has long been ruptured in this region, and the surgeon be not called in until a period when the nature of the tumour can no longer be made out on examination. 3. In a case of this kind, some knowledge as to the former condition of the region affected will be of great service to the surgeon; this alone may excite his suspicions, and even enable him to form a certain diagnosis. 4. There are cases, however, in which little or no information can be obtained, and here the surgeon would conceive no suspicion were he not aware of the possibility of error. 5. In the presence of these sources of doubt, it is to treatment that one must have recourse, in order to attain certainty; it is thus one may learn the true nature of the symptoms. A free application of leeches will rapidly put an end to the sympathetic symptoms set up by an inflammation, and which simulate strangulation. In case of true strangulation this plan would not be disadvantageous. In any case, it need not lead the surgeon to delay too long in having recourse to an operation, should the strangulation persist or increase in severity.

W. JOHNSON SMITH.

NOTTA ON NEUROMA OF THE MEDIAN NERVE: EXCISION AND SUTURE OF NERVE.—At the meeting of the Surgical Society of Paris, on November 8, M. Notta brought forward this case. A tumour of the size of a hazel-nut existed on the anterior surface of the forearm, presenting all the objective and subjective symptoms of a neuroma of the median nerve. This was excised, and the ends of the nerve (retracted about three centimètres) were brought into contact by a metallic suture. After the operation, anæsthesia was proved to exist in the parts supplied by the median nerve. Formication was soon felt. On the thirteenth day sensibility reappeared in the ring finger; on the sixteenth on the thenar eminence; elsewhere the return was more gradual; eight months after the operation, the patient could feel as well with one hand as with the other. At the same time, peripheral ulcerations on the index and middle finger had healed. Microscopic examination showed that the tumour was a fibro-sarcoma in the substance of the median nerve, with the nerve-fibres separated and stretched over it. M. Verneuil said that in his opinion to employ sutures to obtain reunion of nerves

was useless, and founded on a wrong principle. In such cases, sensibility always returned from the periphery towards the centre, and was due to collateral innervation, and not to the reformation of the nerve and the passage of nervous impressions along newly formed nerve-fibres. Sufficient time had not elapsed for this to have taken place in M. Notta's case, where sensibility began to return on the thirteenth day. So, too, in excision of the lower jaw, where the inferior maxillary nerve was destroyed, sensibility began to return the day after the operation, and first in the middle line. He would quote the case of a young lady brought to him with the fingers of one hand extremely flexed upon the palm, the superficial flexor tendons and the median nerve being embedded in a cicatrix resulting from ulceration due to the faulty application of a splint. The fingers were movable and sensitive. In the course of an operation, which was attempted to isolate the flexor tendons, the median nerve was cut across. After the operation, however, sensibility was in no way affected, its preservation being obviously due to the collateral innervation of the parts. [If reference be made to an article on this subject by the translator in the *British Medical Journal*, April 1, 1876, the following explanation by Dr. Richet of 'collateral innervation' will be found. The terminal filaments of the radial, median, and ulnar anastomose amongst themselves to form loops, from which come off the filaments which end in the touch-corpuscles. As both loops and filaments are compound, containing filaments from the median, radial, and ulnar, section of one of these trunks is powerless to deprive of sensibility the corpuscles which are the essential organs of touch.—*Rep.*]

W. H. A. JACOBSON.

SCHRÖTTER'S METHOD OF ANÆSTHESIA OF THE LARYNX BEFORE OPERATION.—In the treatment of diseases of the larynx, some patients are met with in whom sensitiveness is so excessive that it is beyond the ability and patience of the most perfect operator. It is also not uncommon to be so pressed for time that the series of proceedings necessary to bring the patient to complete tolerance cannot be gone through. It is for these special cases that laryngeal anæsthesia, invented by Turck and perfected by his pupils, especially by Schrötter as described in the *Progrès Médical*, October 14, 1876, should be reserved. The latter performs it at the Vienna Hospital in the following way. If the operation is to be performed the next day, at about seven o'clock on the preceding evening the laryngeal mucous membrane is touched twelve times in succession with a pencil steeped in pure chloroform. This proceeding is intended to bring on intense congestion of the mucous membrane, and to place it in the most favourable condition for absorption. At eight o'clock, that is to say, one hour afterwards, a pencil steeped in a saturated solution of acetate of morphia, is plunged twelve times in succession into the larynx. The patient must take care not to swallow, and between each painting should rinse the mouth and throat, as an antidote, with a gargle composed of 10 parts of tannin and 15 of alcohol, in 200 of distilled water. It is advisable to visit the patient about midnight, to make sure that no marked symptoms of poisoning by morphia exists. At seven o'clock in the morning, the larynx is generally found to be insensible and it can be operated on. If a small amount of sensitiveness still exist, the paintings are renewed twelve times, and so on every hour

until the object sought is attained. The disadvantages of this method are the fear of poisoning by morphia, easily removed by a little watchfulness and by the recognised remedies. The advantages have been already enumerated, and indeed it is necessary to have been present at one of these operations, rendered so easy in a patient who the evening before was considered to be entirely unamenable to treatment, to appreciate anæsthesia of the larynx at its just value.

STANFORD ON REMOVAL OF A PLATE OF PEWTER FROM THE OESOPHAGUS.—Dr. F. A. Stanford, of Columbus, relates in the *New York Medical Journal* for October, the case of Joel Turner, aged about fourteen, who swallowed a piece of pewter on February 19, 1876. Dr. C. D. Hurt, of Hurtville, Alabama, was immediately called upon, and after exhausting many ingenious expedients without avail, accompanied the boy to the city for Dr. Stanford's assistance.

The next morning, his appearance indicated very little distress, but his anxiety for relief was great. His breathing was not interrupted. Dr. Stanford passed the umbrella probang without difficulty downward, about seven inches, when it came into contact with the foreign body. Having cautiously continued the probang downward into the stomach, he expanded the bristles to the full umbrella size and began to withdraw. The probang, however, when withdrawn, left the body still in the throat. Dr. Stanford immediately selected four ligatures of surgeon's silk, which he tied to the distal extremity of the probang, and then passed each separately through the extreme outer margin of the bristles, expanded to full umbrella size, brought them upward, and tied them fast to the spool slide.

He again passed the probang beyond the plate, expanded the umbrella, and, drawing hard upon the four ligatures at the same time, made a complete revolution of the probang, hoping by that means to surround the pewter plate, and bring it within at least one or more of the ligatures. Everything being ready, his assistants each held two of the ligatures throughout the process of withdrawal. The ligatures being kept fully tight, the plate was soon withdrawn.

The pewter plate was one inch and three-eighths in diameter, one-fourth of an inch in thickness, and weighed one ounce and one-fourth; it was circular in form.

UHLER ON THE CHEMICAL DETECTION OF LEAD AND IRON BULLETS IN GUNSHOT WOUNDS.—Dr. J. R. Uhler has communicated to the Maryland Academy of Sciences (*American Journal of Medical Science*, October) a method for the more certain detection of leaden and iron bullets when imbedded in the tissues, as in gunshot and shell injuries, especially where they have taken an obscure or curved course, and cannot be readily felt by finger or probe.

The plan was suggested in 1863 by noticing a case in hospital where sulphuretted hydrogen from pus had blackened ordinary lead plaster, and after a little thought was tried and perfected on the spot. It consists of employing materials capable of dissolving lead or iron, such as very dilute nitric acid, and then testing the solution by the usual plan for those metals.

The apparatus consists of a syringe to thoroughly cleanse the wounds with pure water, after which a

solution of nitric acid, five to fifteen drops to a drachm of distilled water, is injected into the wound and allowed to remain a short time, to come into contact with and dissolve a portion of the ball. The injected fluid is then withdrawn either by syringe, or by changing the position of the patient so as to let it run out, and is received when possible at two places, upon a white porcelain plate. One of these spots is now to be tested by a small crystal or drop of solution of iodide of potassium, which will produce a golden-yellow colour if lead be present. The other may be treated by a solution of sulphocyanide of potassium, giving a beautiful red, or ferrocyanide of potassium, affording blue if iron be there. Both of these methods are extremely delicate, and can only be obscured by neglect to wash away pus with accompanying chloride of sodium, or inexcusable carelessness causing loss of blood, and thus producing the reactions of iron from the small quantity contained in the blood-corpuscles. To show most efficiently, the fluid on the plate ought to be colourless, or but slightly tinged like serum. The syringe should generally be introduced but a short distance into the wound, so as to give rise to as little irritation as possible, and the nitric acid solution for the same reason be very dilute. The whole procedure is less irritant than probing, and also extremely useful to the patient, as dilute nitric acid has long been esteemed one of the best dressings for hospital sores.

CRAWFORD ON A CASE OF DISLOCATION OF BOTH HIPS.—Dr. J. B. Crawford (*American Journal of the Medical Sciences* October, 1876), was called on July 13 to see Thomas Jones, a large and powerful man, aged about thirty, who had been injured four or five hours previously while working in a coal-mine, by a mass of rock from the roof falling upon him. Upon examination, a dislocation of both hips was found; the head of the right femur rested upon the dorsum of the ilium, the leg was flexed upon the thigh, the knee lay upon the lower portion of the opposite femur, and the toes were turned strongly inwards. The head of the left femur was displaced into the ischiatic notch. The limb was nearly straight, the thigh being but slightly flexed, the knee nearly unbent, and the toes inverted. The lower portion of the spine was strongly arched. The amount of shortening could not be ascertained. The amount of deformity of the hips was less conspicuous than is usual in single dislocations of the same kind.

The patient was thoroughly anæsthetised, and the reduction effected by manipulation. First flexing the left leg upon the thigh and the thigh upon the pelvis, Dr. Crawford pressed the thigh obliquely across the abdomen, at the same time rotating the femur, using the leg as a lever, and then carrying the knee across to the left side, lifted the thigh to a right angle with the body, and made moderate vertical traction; when, after dislodging the head of the bone from the sciatic notch, it glided readily and noiselessly into its proper place. Considerable force, with rotation of the femur, was required to carry the flexed thigh across from the right to the left side of the abdomen; all the other movements were effected with comparative ease. Not more than two minutes were occupied in the process. The reduction of the remaining luxation was attended with more difficulty. Dr. Crawford first moved the limb in the line of its easiest motion; flexing the leg upon the thigh, and the thigh upon the pelvis, as before, carrying the knee well upward and obliquely across the median

line of the body. Then attempting to abduct while rotating the limb, he found the movement in that direction suddenly arrested. Again, pressing the thigh firmly upon and obliquely across the abdomen, and abducting and rotating as before, he succeeded in disengaging the head of the bone and bringing it apparently to the posterior border of the acetabulum; but upon bringing the limb down to a horizontal position, the head of the femur had returned to its former situation upon the dorsum ilii. The manipulations, varied somewhat, were repeated several times with the same result. Finally, having brought the head of the femur to the posterior border of the acetabulum, and finding it again arrested at the edge of the socket, Dr. Crawford directed the pelvis to be held firmly down by two assistants while he made strong upward traction upon the thigh bent at a right angle with the body. In about a quarter of a minute, the dislocated bone returned to its socket with a sound that was heard distinctly. The patient left his bed ten days after the reception of his injury, and walked about the ward with but slight difficulty.

The records of surgery furnish but a very few examples of simultaneous dislocation of both hips. Dr. Gross, in his 'System of Surgery,' says that the accident is exceedingly uncommon, and mentions but three instances of its occurrence—one recorded by Professor Gibson, one by Cooper, of London, and one which occurred in the practice of Dr. Boissot, of Philadelphia. Hamilton, in his work on 'Fractures and Dislocations,' mentions only a single example of this injury, that of Professor Gibson. Each of these cases, where the particulars are given, differed from the others, as well as from the one here recorded, in regard to the character of the dislocation; in one the displacement being iliac and thyroid, in the other iliac and pubic, while the one here recorded was iliac and sciatic.

The subject of the present report informed Dr. Crawford that he was at work, standing on a surface which inclined at an angle of about forty degrees, with the feet widely separated, the right one being much lower than the left, and the body bent forward. While he was in this position, a large mass of rock, weighing many hundred pounds, fell from the roof, several feet above him, striking him in the lower dorsal region, bending the thighs upon the body and pressing him forcibly down upon the rock on which he was standing. He was certain that both joints were dislocated at the same instant, as the falling rock immediately rolled or slid from and released him. Severe bruises upon his back, and a deep cut on the right arm, were the only other injuries received.

DISLOCATION OF THE MALAR BONE.—The *New York Medical Journal* for October states that a case of dislocation of the malar bone was then under observation in St. Francis's Hospital. The dislocation was caused by direct injury, resulting from a fall, and was compound. The wound was external to the outer canthus of the eye, and it would seem that some projecting body, striking the patient in his descent, was the immediate cause of the injury. On passing the finger into the mouth, it was noticed that the lower angle of the bone rested on the outer side of the molar teeth. By making pressure it could be apparently replaced, but so far no attempt at reduction had been considered advisable.

BUNDY ON FIBRO-MUSCULAR TUMOUR OF THE PROSTATE.—Dr. Bundy, at a meeting of the Boston Society for Medical Observation (*Boston Medical and Surgical Journal*, October 19), showed a specimen of fibro-muscular tumour of the middle lobe of the prostate. The patient was seventy-seven years of age, and fifteen years ago was told that he had an enlarged prostate. During the past three years his urine had at times contained blood. Ten weeks before death he began to be troubled with frequent desire to pass water, attended with pain and dribbling of urine. Dr. Bundy saw the patient five weeks ago for the first time, when he drew off two quarts and a half of urine. The patient then stated that he had noticed his bladder to be abnormally distended for some weeks before. At first the catheter was required only twice or three times a day, but during the last week of life as often as every four hours.

During the last few days of life only there was much trouble in passing the catheter. The tumour was so attached to the bladder by a short, thick pedicle, as to act as a partial valve to the urethra.

RECENT PAPERS.

- Wound of the Right Half of the Lower Part of the Cervical Spinal Cord. By Dr. Alessandrini. (*Annali Universali di Medicina*, Oct.)
- On Massage, and its Value in Practice. By Dr. W. Wagner. (*Berliner Klinische Wochenschrift*, Nov. 6.)
- Method of Operation intended to Facilitate Re-Union after Partial Excision of the Nose. By M. D. Mollière. (*Lyon Medical*, Nov. 19, 1876.)
- On Penetrating Epithelioma of the Upper Jaw. By Dr. Réclus. (*Le Progrès Médical*, Nov. 18.)
- Some Cases bearing on Lister's Antiseptic Method of Dressing. By Dr. Samuel Pozzi. (*Le Progrès Médical*, Nov. 25 and Dec. 2.)
- Aneurism of the Right External and Common Carotid Artery: Ligature: Death. By Dr. M. M. Pires Caldas. (*Gazeta Medica da Bahia*, Oct.)
- Excision of Dislocated Astragalus. By Dr. A. Iversen. (*Nordiskt Medicinskt Arkiv*, Band viii.)
- Mammitis and Mammary Abscesses treated by Bandaging. By Dr. L. A. Dugas. (*Saint Louis Medical Journal*, Nov.)
- The Frequency of Stone in the Bladder in Finland. By Dr. Estlander. (*Boston Medical and Surgical Journal*, Nov. 2.)
- Experimental Researches in Inflammation of Bone. By Dr. F. Busch. (*Berliner Klinische Wochenschrift*, Dec. 4.)
- Contribution to the Clinical History of Exstrophy of the Bladder. By Dr. P. Landi. (*Lo Sperimentale*, Nov.)

MATERIA MEDICA AND THERAPEUTICS.

BURRALL ON NITRITE OF AMYL AS AN ANTIDOTE TO CHLOROFORM.—At a meeting of the New York Academy of Medicine, on September 21, Dr. F. A. Burrall read a paper on nitrite of amyl as an antidote to chloroform, in which he brought it forward as the most available of all medical agents to avert the dangerous influence of chloroform when used as an anæsthetic. It was believed that nitrite of amyl acted as an antidote to chloroform by producing a direct paralysis of the vascular walls, hence causing a rapid circulation. Dr. Burrall recapitulated the experiments performed upon cats and dogs by others and himself, and said that amyl should always be in the armamentarium of the medical man. It could be administered from a bottle, or five or six drops might be placed on a handkerchief

and held to the nose and mouth of the patient. An exceedingly convenient method of carrying the drug was by means of the nitrite of amyl-bulbs suggested by Dr. T. A. McBride. When required, one of the bulbs could be broken in a handkerchief or towel, and its contents immediately inhaled.

Dr. G. M. Smith remarked that the question might arise whether the antidote was not a dangerous agent.

Dr. S. Caro said that one of his patients, who suffered from angina pectoris and was treated by the nitrite of amyl in drop-doses taken by the mouth, fell into a sort of collapse after the fifth dose, which he was quite certain would have proved fatal had not the influence of the drug been arrested by a vigorous administration of aromatic spirits of ammonia.

Dr. J. C. Peters was inclined to attribute the collapse in Dr. Caro's case to the prostrating effect produced by the angina.

BLAKE AND OTHERS ON THE TREATMENT OF GASTRIC ULCER.—In a paper read by Dr. J. G. Blake before the Boston Society for Medical Observation, and published in *The Boston Medical and Surgical Journal*, October 19, he says that the most successful treatment of gastric ulcer is rest, meanwhile supporting the system by nourishment introduced through other channels. Fortunately, the large intestine allows this to be done, and for sufficiently long periods, when care is exercised in the selection and preparation of articles of nourishment. In addition to the ordinary substances used, as beef-tea or juice, strained oatmeal gruel, and white of egg, attention has, within a few years, been called to the value of minced fresh meat, thoroughly incorporated with the pancreas of freshly killed pigs in the proportion of two parts of the former to one of the latter. In a case of intestinal obstruction under observation, recourse was had to this among other methods of sustaining the strength without loading the bowels above the obstruction. The method of proceeding was to have a messenger waiting at a slaughtering establishment, who received the pancreas and brought it without delay to the patient's residence. Here the physician, after removing the fat and selecting the true glandular substance, mixed it thoroughly with the finely divided meat, and placed it, in the form of a soft sausage, as high in the rectum as was possible without inflicting pain. The result was highly satisfactory for a time. In from six to twelve hours the parts not absorbed came away in the form of a thick, creamy emulsion. The patient declared that he felt stronger, and derived more benefit from this than from an injection of beef-juice. After repeating it ten or twelve times, however, the intestine became sensitive and painful, and it was necessary to discontinue it. The chief objection lies in the difficulty of complying with all the conditions. The pancreas must be fresh; if more than two hours from the living animal, its value is much impaired or lost. The pig should be killed after a full meal. It is also desirable to get the mass high up in the colon, and this is by no means easy of accomplishment.

Dr. H. I. Bowditch remarked that in cases in his own practice he had found soft, stale bread in milk to be retained when nothing else would. If constipation resulted, it might be corrected by the use of bismuth and rhubarb. He usually began with a very small quantity of milk, not more than a teaspoonful,

and gradually increased it. Often the slightest deviation from this form of nourishment would cause the vomiting to return. He thought this treatment should be continued for a long time. One patient under his care had lived on this diet almost exclusively for weeks.

Dr. Hildreth referred to the solvent action of fresh pancreas in the digestion of beef-tea. In two cases of gastric ulcer, in each of which enemata of beef-tea with fresh pancreas had been given, the discharges were of a yellowish colour. Dr. Hildreth thought the injection might be more effectually given by attaching to the syringe a glass stem connected with a moderately long India-rubber tube. He had treated a lady with beef-tea enemata, who had previously had the same with fresh pancreas added to it, and she had noticed no difference whatever in the effects produced.

RECENT PAPERS.

Preparations of Corrosive Sublimate for Subcutaneous Injection. By Dr. Kratschmer. (*Wiener Medizinische Wochenschrift*, Nov. 18 and 25.)

The Poisons of Maize, and their Application to Hygiene and Therapeutics. By Dr. Lombroso. (*Lo Sperimentale*, Oct. and Nov.)

Salicylic Acid in Parametric Exudation. By Dr. Hertz. (*Erztliches Intelligenz-Blatt*, Nov. 14.)

On the Iodide of Starch and its use in the Therapeutics of Toxicology. By Dr. Ranieri Bellini. (*L'Union Médicale*, Nov. 15.)

Observations on the Employment of Various Methods for the Expulsion of Taenia. By Dr. Tillessen. (*Deutsche Medicinische Wochenschrift*, nos. 46, 47, 1876.)

Results of Hypodermic Injections. By Dr. Lurz. (*Allgemeine Medizin. Central-Zeitung*, 88, 89, 90, 91, 92, 1876.)

PSYCHOLOGY.

DUKES ON A SIMPLE MODE OF FEEDING SOME PATIENTS BY THE NOSE.—Mr. Clement Dukes (*Lancet*, Sept. 16, 1876) describes a method of nasal feeding, which might probably be of great service in the private practice of insanity.

The apparatus consists of (1) a yard of India-rubber tubing of one eighth of an inch bore; (2) a bottle of any kind (an ordinary soda-water bottle does well); (3) a piece of twine to tie the tube in the bottle, so that the end of the tube reaches to the bottom of the bottle.

The mode of action of this apparatus is that of a syphon. 1. The bottle with the fluid in it is held or fastened above the head of the bed; the patient lying on his back, without a pillow. 2. The tube is exhausted of air, by laying hold of the tube close to the mouth of the bottle with the finger and thumb of the left hand, and running the finger and thumb of the right hand along it, closely compressing it while doing so; the fluid of course following the motion of the hand, when the pressure of the left hand is removed. 3. The free end of the tube is then passed just within the nostril, and retained there with the left hand, while the right has the tube closed by the pressure of the finger and thumb. 4. By alternate compression and relaxation of the tube an ordinary mouthful of fluid can be allowed to escape at a time, permitting each quantity, if desired, to pass into the stomach before another gulp is liberated. This syphon can also be used for washing out the nose, the patient's head being inclined forwards over a basin.

[It is presumed that the above described nasal-tube could be passed down the nostril into the œsophagus, if necessary.—*Rep.*]

H. SUTHERLAND, M.D.

OBSTETRICS AND GYNÆCOLOGY.

VAN DE WARKER ON THE TREATMENT OF ANTE-FLEXIONS OF THE UTERUS.—Dr. Ely Van de Warker, of Syracuse, N.Y., describes a new ante-flexion pessary which he has designed from that of Dr. Eklund. The principle on which it is constructed is that the instrument should be so made as to bring the posterior vaginal wall into play as the point of counter-pressure to the force of anterior displacement. This is effected by means of a stem, which fits into a flange, which presses against the posterior vaginal wall; the flange is a flat oval in form, bent at right angles. Dr. Van de Warker has the flange made in different sizes to suit different cases. Success depends upon the flange being accurately fitted.

DEPAUL ON RETENTION OF A DEAD FŒTUS.—In his 'Clinique d'Accouchements' (*Journal des Sages-Femmes*, September 16, 1876), Professor Depaul gives the case of a child born dead at term. The child was macerated, but bore no traces of putrefaction. The patient had carried the dead child twenty, and perhaps thirty days or more, without any accident. M. Depaul remarks that when a child is dead in the uterus, so long as the membranes are intact the labour need not be excited, and one must not confound, as has often been done, maceration with putrefaction.

CHAMBAUD ON OBLITERATION OF THE OS UTERI IN A PREGNANT WOMAN.—Dr. Chamberaud gives (*Archives de Tocologie*, September, 1876) an account of a case of complete obliteration of the uterine mouth in a pregnant multiparous woman. The case began as follows. On March 2, 1875, Dr. Chamberaud was called to the patient, a young healthy woman, aged twenty-six. She was in bed, sweating profusely; respiration short and hurried; pulse regular, 130 per minute. She was in great pain in the loins; the abdomen was hard, tense, and tender; the uterus was enlarged; and apparently there was a pregnancy of two months. Dr. Chamberaud ordered fifteen leeches to be applied to the right iliac region, with warm poultices to assist the flow of blood. As the bowels were confined, an injection of oil was ordered. A few days afterwards, the patient was much better. On March 14 Dr. Chamberaud was called again to her, as there was a purulent discharge from the vagina. On examination by the speculum, Dr. Chamberaud found considerable ulceration of the os, with a discharge of thick purulent matter like white of egg. He at once applied nitrate of silver, and repeated this application once a week till June 13 following; that is, he made fourteen cauterisations. He did not see her again till June 27, when he found the os uteri completely closed by a cicatricial tissue joining together the lips. He then called in Dr. Bessette, who also examined the patient, and found the obliteration of the os complete. Having thus become quite clear as to the diagnosis, Dr. Chamberaud wrote to ask Professor Depaul how he should treat the case, and was advised by him to leave it till term, when, if the uterine efforts were insufficient to break

down the cicatricial tissue, the division thereof by a bistoury would be necessary.

On August 15, at half-past three in the morning, Dr. Chambaud was called to the patient, when he learnt that she had been in labour fourteen hours. After waiting three hours to see if some instruments he wanted had arrived, Dr. Chambaud proceeded to make an incision through the closed os. The incision made was only large enough to admit the extremity of a finger, and in making it the bag of waters was pierced, and liquor amnii escaped. Dr. Chambaud then broke down the remaining tissue with his finger, and the head coming down filled up the opening completely. At half-past twelve a non-viable female child was born, which died the next day. The patient had a high temperature and frequent pulse for a few days, at the end of which she made a good recovery.

Dr. Chambaud is convinced that if he had seen the patient the day after he found her out instead of waiting a fortnight, he would not have had the task of communicating this curious and interesting case.

SIMON ON OPERATION FOR VESICO-VAGINAL FISTULA.—Dr. Simon, of Heidelberg, (*Obstetrical Journal of Great Britain and Ireland*), in a paper on the method of operating for vesico-vaginal fistula, compares his own operation with that of Bozeman, of New York. Simon operates in lithotomy position, draws the parts round the fistula forwards, pares the edges with a knife, uses a simple knotted silk suture, enjoins no measures of precaution as regards passing urine after the operation, and allows the patient, if she please, to leave her bed on the second or third day after the operation. Bozeman operates in the knee-elbow position, leaves the fistula *in situ* while operating, pares the edges with scissors, employs a complicated wire suture, leaves a catheter in place after the operation, and often gives large doses of opium. Dr. Simon gives seven cases, four by himself and three by Bozeman, who operated when on a visit to Heidelberg. From the results of these cases, Dr. Simon considers his method superior to Bozeman's.

MARDUEL ON UTERINE THERMOMETRY AS A MEANS OF DIAGNOSING PREGNANCY AND DEATH OF THE FÆTUS.—In the *Lyon Medical*, October 29, 1876, Dr. P. Marduel gives the results of the experiments in uterine thermometry by Cohnstein, Fehling, Schlesinger, and Alexieff. They are as follows. In a gravid uterus containing a living child, the temperature is from 0.27° to 0.54° Fahr. higher than in the vagina, the temperature in the vagina being higher than in the axilla. In a gravid uterus containing a dead child, the temperature is lower than that of the vagina.

The uterine temperature is also raised in inflammations of the organ, as perimetritis, endometritis, etc. Alexieff has, during labour, taken the buccal and rectal temperatures of the fœtus, and has found them to vary from 1.26° to 2.34° Fahr. for the rectal temperature, and from 0.54° to 1.26° Fahr. for the buccal temperature, above that of the vagina.

GALABIN ON THE ACTION OF MIDWIFERY FORCEPS AS A LEVER.—In the *Obstetrical Journal for Great Britain and Ireland*, October, 1876, Dr. Galabin remarks that the oscillatory movement is superfluous in all cases where extraction can be effected by forceps with moderate force, and it is useless when the head is movable, friction taking

little part in its retardation. When the head is impacted, a very slight oscillation, in which the head is made to take part, may assist in starting it by converting the greater statical into the lesser dynamical friction. When the head is impacted, and great force is required for its extraction, a mechanical advantage may be gained from leverage by having recourse to oscillatory movement. The oscillations should be of very small amplitude, and should only be continued if it be found that each of them causes a corresponding advance of the head. Each oscillation should be accompanied by firm compression of the head to prevent the forceps from slipping and the lever from becoming decomposed. Dr. Galabin does not think that the oscillatory movement, when the head is high in the pelvis, can be justified.

FANCOURT BARNES, M.B.

TRENHOLME ON REMOVAL OF OVARIES.—Dr. E. H. Trenholme relates (*Obstetrical Journal of Great Britain and Ireland*) two cases of ovariectomy, or spaying. In the first case he removed both ovaries through an incision in the abdominal wall, between the umbilicus and pubes, five inches long. His reason for doing so was the presence of an interstitial fibroid in the uterus, which was wearing out the patient by pain and hæmorrhage. His theory was, that by the removal of the ovaries the patient would be made forty-five instead of thirty-two, and that the tumour would disappear in the way these tumours often do at the change of life. The patient recovered perfectly, and is in good health. In the second case he removed the left ovary from a woman twenty-eight years old, suffering from dyspareunia and chronic oöphoritis, with the result only of relieving the dyspareunia. The ovary was removed through an incision in the posterior wall of the vagina.

RABORG ON INDUCTION OF PREMATURE LABOUR BY AN INTERRUPTED CURRENT OF WATER.—At the meeting of the Medical Society of the County of New York on September 25 (*New York Medical Journal*, November), Dr. S. A. Raborg, after reviewing the different conditions in which premature labour was indicated, drew special attention to three cases which had come under his observation, and in which labour had been induced by a current of water carried against the cervix. The first patient was twenty-five years of age. Before coming under the observation of Dr. Raborg, she had several abortions and labours, in which delivery was accomplished by means of version and craniotomy. Her pelvis measured two and a half inches in the antero-posterior diameter, and about the same length in the transverse and oblique. After consultation, it was deemed expedient to bring on labour at the eighth month. For this purpose, an interrupted current of water was carried against the posterior wall of the cervix by means of a Davidson's syringe. Within twenty-four hours pains were induced, and at the end of five days and twelve hours the mother was delivered of a child without the aid of mechanical interference. In a succeeding pregnancy the continuous current of water was employed by means of an elevated reservoir. Labour was accomplished in nine days and twenty-three hours.

In another case the intermittent current was again employed, and after five days and eleven hours labour was completed. In reviewing the two cases, Dr. Raborg said that he felt that the current of water

from the syringe was more satisfactory than the continuous current.

Reference was made to the method suggested by Dr. T. G. Thomas, in which the nozzle of a Davidson's syringe was introduced within the cervix uteri, and, after compressing the cervix, the current of water was carried against the membranes in such a manner as to partly detach them. By Dr. Thomas's method, labour has frequently been finished within twenty-four hours.

Dr. Isaac E. Taylor did not approve of the vaginal injection of water, inasmuch as he had noticed that not only was it unreliable, but in some cases seemed even to retard labour. In bringing on labour, he relied on the use of Barnes's dilators as the most efficient means of expanding the cervix uteri.

RECENT PAPERS.

Amputation of the Uterus and Ovaries after Cæsarean Section. By Dr. Porro. (*Annali Universali di Medicina*, Oct.)

Diagnosis and Therapeutics of Parametritis, with Reference to Operative Procedures. By Dr. Kugelmann. (*Allgemeine Wiener Medizinische Zeitung*, Nov. 14.)

Some Notes on the Operation for Ovariectomy in the United States. By Dr. L. Obet. (*Annales de Gynécologie*, Nov., 1876.)

Retention of the Placenta after Abortion. By Dr. Cordès of Geneva. (*Ibid.*)

Report of the Obstetric Clinic of the University of Breslau for the Academic Years 1873-75. By Dr. L. Landau. (*Berliner Klinische Wochenschrift*, Nov. 27 and Dec. 4.)

Two Cases of Ovariectomy. By Dr. Fasbender. (*Ibid.* Nov. 20.)

Post Partum Hæmorrhage, with a Contracted Uterus. By Dr. Weizel. (*Erethisches Intelligenz-Blatt*, Nov. 28.)

DERMATOLOGY.

ZUNKER ON TWO CASES OF VASO-MOTOR NEUROSIS.—The first case (*Berliner Klinische Wochenschrift*, August 21 and 28) was that of a robust man, aged twenty, who presented himself, at the Clinic, for nettlerash. He had had a rather obstinate attack of the same kind two years before, but had otherwise been quite healthy. The present eruption appeared on May 26. It commenced on the arms and chest, and soon spread to every part but the face, though the aspect of this was so peculiar as to at once attract attention. The chin and both cheeks, temples, and ears, were deep red, shining, and tense, though without any circumscribed hardness. The temperature of the parts was apparently not increased; the pupils were equal, both enormously dilated; reaction to light was good. On the chest and abdomen were moderately large isolated or confluent patches, of reddish colour and irregular form; they were associated with resistant, sharply defined, pale-red elevations. On pressure with the finger-nail or with a sharp instrument, they could be produced with absolute certainty. The sensations felt during their artificial production consisted in itching, and a transient feeling of warmth. No source of reflex irritation could be discovered; the organs of digestion, circulation, and respiration appeared perfectly normal. Strychnine and atropia were successively tried, in combination with tepid baths, but without effect; and it was not till June 12, when 13 lbs. of sea-salt were added to the bath daily, that the symptoms began to subside. No fresh spots showed themselves; the redness and turgescence of the face disappeared, and the pupils

became of the normal size. On June 19 he was discharged at his own request, having then no subjective troubles. The patient was made the subject of many experiments. The following were the changes produced by simple mechanical irritation with a blunt instrument. First, a transient paleness, common to all skins, appeared; then cutis anserina developed itself, not only in the irritated stripe itself, but for a varying distance beyond it. At the end of thirty seconds a slight, though distinct redness appeared in the centre of the stripe, and, a few seconds later, the skin bordering upon it became paler, while the redness increased until it corresponded exactly with the breadth of the instrument and the course taken by it. As the redness deepened, the pale zone grew more marked, and sent out, here and there, processes which were bordered in turn by a third zone of pale red colour. At the end of two minutes, by which time the third zone was complete, the skin of the central red stripe became elevated, especially around the hair-follicles. This elevation extended itself first to the entire irritated surface, and then crossed over into the pale zone, of which it occupied about two-thirds. At the same time the outer red zone began to grow inwards, so that, in four or five minutes, a white, sharply defined, very elevated wheal, upon a vividly red ground, presented itself. The raised surface was flat throughout; the prominences of the papillæ and hair-follicles having disappeared. In from fifteen to twenty minutes the redness began to fade, the wheal became smaller, and finally disappeared, leaving, as the only trace of its existence, a palish, slightly elevated semi-resistant spot, which lasted in one instance about eight hours. Experiments were next made to ascertain whether other modes of irritation would produce the same results. Heat, cold, nitric acid, acetic acid, faradisation, galvanism, all failed, though the patient seemed very irritable to the last of these. The development of a wheal could be arrested by means of ether-spray; and mechanical irritation failed to produce them on a surface made anæsthetic by this, though the susceptibility to their production returned with the resumption of sensation. When irritation was applied to a limb rendered bloodless by Esmarch's bandage, no change was produced until the elastic tube was removed, when the wheals appeared as usual. Similar, though not quite such complete results were obtained by digital compression of the main artery of the limb; a red stripe appeared, which afterwards became bluish, and on the removal of the pressure, provided this were early, the wheal showed itself. The results obtained by compression of the veins were the same as those described by Auspitz.

The second patient, also aged twenty, was a worker in white lead, and was in the hospital for lead-colic. Wheals, similar to those of the other patient, could also be produced in him; the paleness, however, was much more fugitive, and the elevation was somewhat less marked. Their production seemed to depend upon the presence of lead in the system; for, as the symptom of poisoning diminished, the difficulty of eliciting them increased, and, some days before the skin had recovered its normal sensibility, the experiment failed altogether. The same attempts were made as in the other case to produce them by irritation other than mechanical; and with similar results. The only exception was that, when Esmarch's bandage was used, the wheals did not show themselves on the removal of the ligature. Indeed, irritation soon after its removal failed to pro-

duce any effect. The wheals were believed to consist in a serous infiltration of the rete mucosum and the superficial layer of the corium; and not, as in Gull's cases, in a contraction of the muscular fibres of the skin. The pale zone was referred to a direct peripheral contraction of the vessels, and not to reflex action; the outer red zone, on the other hand, was attributed to a reflex dilatation of the vessels; the increased irritability lying in the vaso-motor nerves, and not in those of sensation. The central area of redness was explained by the dilatation of the arterioles consequent partly upon mechanical irritation, partly upon a congestion compensatory to the surrounding anæmia. Further, since the capillaries and venules were not at first correspondingly dilated, an obstruction to the flow of blood ensued, which resulted in the transudation of the liquor sanguinis. The quantity of this, if great, would cause the elevation to transcend the limits of the irritated surface. Reasons, derived in part from observation of these cases, in part from the physiological and pathological experiments of others, are given for these conclusions.

RALPH W. LEFTWICH, M.D.

NEUMANN ON GALVANO-CAUSTIC IN SKIN-DISEASES.—Neumann (*Allgem. Wiener Mediz. Zeitung*, no. 28, 1876) describes a galvano-caustic apparatus made for him by Leiter, of Vienna, which he recommends especially for the destruction of isolated lupus-nodules. The advantages of the apparatus consist in facilities for fixing the part, and limiting accurately the depth of the tissue which is to be destroyed.

NEUMANN ON THE TREATMENT OF ACNE ROSACEA.—Neumann (*Allgem. Wiener Mediz. Zeitung*, no. 37, 1876) has found excellent results from brushing the affected skin with a solution of one part of carbolic acid in three or four parts of alcohol. The application is made three times a week, and produces no cicatrix. The treatment is not applicable when there is much thickening and oedema.

PICK ON THE RELATION OF DIABETES TO SKIN-DISEASES.—Pick (*Medicinisch-Chirurgisches Centralblatt*, no. 34, 1876) describes cases of pruritus and furunculosis, in which these maladies were developed in diabetic patients. He believes that the diabetes and skin-lesions are produced by a common cause, and that the origin of both is to be found in a disordered condition of the brain. Some cases of skin-affection are, on the other hand, the effect of the diabetes. Amongst these are instanced certain forms of eczema, xeroderma, pruritus, furunculosis, and a special affection of the mucous membrane of the mouth, which he designates epitheliosis mucosæ oris.

G. THIN, M.D.

RECENT PAPERS.

Frictions of Sand in Skin-Diseases. By Dr. L. Ellinger. (*Wiener Medizinische Wochenschrift*, Nov. 4.)

OPHTHALMOLOGY AND OTOLOGY.

SCHELL ON AN AUTOMATIC METHOD OF OPENING THE EUSTACHIAN TUBE AND AIRING THE TYMPANUM.—In the *American Journal of the*

Medical Sciences for July, 1876, Dr. H. S. Schell, of Philadelphia, describes a new method for inflating the tympanum, which, he says, he has employed with advantage for more than a year. The method is based upon the fact, that during the act of yawning, and especially if the mouth be kept closed, as in a suppressed yawn, a sensation of movement or slight clicking sound will be experienced in the ears. Dr. Schell thus describes his plan.

‘I generally direct the patient to keep the lips tightly closed, and to draw down the throat, and even to separate the jaws slightly, as if trying to yawn without being observed. The effort usually produces the yawn itself, and if, immediately after the long inspiration which accompanies the act, or at the beginning of expiration, the nostrils be closed with the fingers, air will be felt to fill the tympanic cavities. The tympanum will remain inflated for some time, often uncomfortably, if any amount of force have been used, but may be quickly eased by swallowing the saliva once or twice with the mouth shut. The obvious effects of the inflation can be limited to either ear, by closing the external meatus of the other tightly with the unoccupied hand. The *modus operandi* of the process is as follows. In the act of yawning, as observed in a mirror, the base of the tongue is depressed or fixed, the soft palate is elevated or fixed, and the isthmus of the fauces is very much narrowed by the posterior pillars being strongly drawn towards the middle line. From the shape of a broad arch the isthmus faucium shrinks into a slit half an inch wide, and the posterior pillars become straight and rigid. While this narrowing is in progress, a clicking sound is heard in the tympanum, evidently owing to the separation of the walls of the tube, and then inflation may be easily performed. It seems from this that the principal, if not the only agent in producing this effect, is the palato-pharyngeus muscle, through that part of it which arises from the cartilage of the Eustachian tube, the so-called salpingo-pharyngeus. The salpingo-pharyngeus does not necessarily contract simultaneously with the main portion of the palato-pharyngeus, for I find that in my own person I can voluntarily narrow the isthmus faucium to about half an inch in width without affecting the Eustachian tube, unless I make the effort to yawn. In the former case, the muscle expends its force upon the thyroid cartilage and pharynx, and the base of the tongue rises. In the latter, the base of the tongue being fixed, the muscle acts in the opposite direction, the salpingo-pharyngeus has a *point d'appui*, and the tube is pulled open. But the influence of the palato-pharyngeus upon the soft palate is at the same time opposed by the levator palati; it may be also to some extent by the tensor palati, for the palate is raised or fixed, and, as the latter two muscles have some attachment to the cartilage of the tube, it is possible that they also contribute something to the particular result in question. At all events, in the effort to yawn all the muscles of the throat apparently participate, but the peculiarity which accompanies the opening of the tube occurs when the action of the palato-pharyngeus is most evident. As the patency of the Eustachian tube produced in this way is not merely momentary, but continues during the yawn, there is no need of hurry, and inflation can be made only deliberately, and softly or strongly as occasion may require. It is only necessary that it should be done while the yawn lasts, and not after it is over. In many cases it is not necessary to in-

flute at all, the mere opening of the mouth of the tube being sufficient to let the air rush into the tympanum.

With regard to the occasions for the use of this process, Dr. Schell has found it very useful in the inflammatory conditions of the middle ear, which are accompanied by constantly accumulating mucous or purulent secretion. If there be at the same time perforation of the membrana tympani, the discharge of the secretion into the external meatus may be secured at frequent intervals, and the entire aural tract may be kept clean by the application of medicated washes. To apply these, it is only necessary to draw a portion of the liquid up the nose until it is felt to run into the pharynx, to hold the head inclined so that the diseased ear is underneath, and to practise inflation as before. In cases of deafness resulting from closure of the tube from recent swelling about its pharyngeal extremity, this method offers an easy means of obtaining patency of the canal from time to time without pain or annoyance.

MOOS ON CHANGES IN THE LABYRINTH IN INFECTIOUS DISEASES.—In the *Archives of Ophthalmology and Otolaryngology* for August, 1876, is a paper by Dr. Moos of Heidelberg on the changes in the labyrinth accompanying infectious diseases. The author commences with some remarks on the literature of the subject, and then gives full reports of six cases of typhoid fever, in four of which *post mortem* examination revealed changes in the labyrinth. Dr. Moos finds as the result of microscopical examination, that in ileo-typhus the entire labyrinth is very often affected on both sides. Any portion may be attacked. The parts which suffered in all the cases were the utricle, saccule, ampulla, and lamina spiralis membranacea. The parts exceptionally involved were the semicircular canals and the zona ossea. The parts most essential to good hearing were regularly affected. Whether there exists any connection between this and certain peculiarities in the normal distribution of blood-vessels Dr. Moos cannot at present decide. Histologically the affection consists of an infiltration of lymphoid cells or an infiltration of small cells. With the exception of one case in which fat granule-cells were found besides the small cells, with the same anatomical distribution and in almost equal abundance, the latter was the only and the constant new formation.

Before interpreting these facts, Dr. Moos narrates some more cases, two of total deafness after typhoid fever, one of inflammation of the labyrinth after scarlatina, and one of purulent inflammation of the labyrinth in variola. The author then considers the question whether in the pathological changes found in the labyrinth of typhoid patients we have to do with merely a state of irritation (an inflammation), or whether there is a special new formation peculiar to typhoid. In support of the view that there is a new formation special to typhoid, the following reasons are adduced. In the first place the affection occupied both sides uniformly, even in one case where it was impossible to speak of any transference of the morbid process from the middle to the inner ear. Besides, we ought to consider the resemblance borne by these processes to changes occurring in other organs during typhoid fever, such as have been observed not only in the glands of the intestinal mucous membrane, and in the mesentery, but also in the liver, the kidneys, and in the peritoneum by Wagner, Friedrich, and others.

In four of the cases in which a purulent inflammation of the tympanic cavity also existed, it might be assumed that the inflammation was simply propagated from the tympanic cavity through the wall of the labyrinth to the cutaneous labyrinth, especially as the membranous tissues of the vestibule lying next to the tympanic cavity were often the most seriously affected (even the periosteum of the vestibule being attacked in some cases); and besides, the changes in the labyrinth did not differ in any respect from those of the first stage of inflammation.

In the case of scarlatina, the state of the labyrinth could be accounted for in like manner.

Clinical reasons support the view of the translocation of the inflammation from the tympanic cavity. If, however, the inflammation of the labyrinth be regarded as propagated from the tympanic cavity it may still be possible that the tympanic affection stands in a relation of cause and effect to the typhoid process. Catarrhal affections of the mucous membranes in general are not rare in typhoid fever. Having stated the possible modes of explanation, and pointed out the fact that inflammation in the labyrinth is common in typhoid, Dr. Moos leaves for future decision the question whether in such cases we have or have not to do with a specific typhoid process, and concludes his interesting and suggestive paper by describing the various possible modes of termination of the affection of the labyrinth. If this affection be an inflammatory irritation, the latter may increase in its course to a purulent inflammation; or a fatty breaking down and complete resorption of exudation may occur; the latter may be the case even when we have a typhoid new formation, or there are opacities, thickenings, or atrophy of the affected tissues; or, as in the intestinal follicles and the mesenteric glands in typhoid fever, there may be necrosis or ulceration.

In applying these various possible results to those disturbances of hearing accompanying typhoid, which offer only negative symptoms during life we may expect to find: 1. Gradual and spontaneous disappearance of functional disturbance of hearing; or, 2. Persistence of some degree of deafness, with or without subjective noises; or, 3. Complete unilateral or bilateral disturbance of function.

BOWEN ON DISEASE OF THE MIDDLE EAR INDUCED BY THE USE OF THE NASAL DOUCHE.—The *New York Medical Record*, September 9, 1876, contains a record by Dr. Wm. Bowen of six cases of disease of the middle ear which appear to have been due to the use of the nasal douche in the treatment of naso-pharyngeal catarrh. This method of treatment would appear to be in very common use in America, it being a simple, efficacious, and apparently safe remedy for an affection to which Americans are peculiarly subject. Dr. St. John Roosa, however, called attention to the production of supuration of the middle ear by a current of fluid thrown by the douche into the Eustachian tube and the delicate parts beyond. The late Mr. Hinton also mentioned a case in his 'Questions of Aural Surgery.' Dr. Bowen's remarks on the *modus operandi* of this cause of aural disease are as follows. 'The structure of the lining mucous membrane of the Eustachian tubes is such as to be antagonistic to the passage of fluids from the pharynx to the cavity of the tympanum. The ciliated epithelium moves downwards towards the pharyngeal openings, and as the walls normally are in apposition in the

greater portion of their length, except in connection with the act of swallowing, there is requisite a certain amount of force to inject a fluid to the cavities of the middle ear behind the drum-head. The action of the douche depends upon the physiological action of the muscles of the palate, which close the lower part of the pharynx, and prevent the passage downwards of the medicating liquid, which, entering the nostril on one side, filling the nasal cavity and upper part of the pharynx, escapes through the opposite nostril. If there is undue patency of the tubes the current may be forced up against the cilia, and possibly reach the tympanic cavities, although inflammation without its going so far, but on account of extension of tubal irritation. The more frequent source of danger, however, is the act of deglutition which may occur while the pharynx above the palate is filled. The mouths of the Eustachian tubes simultaneously open, and the hydrostatic action occurs along their course. That this occurs frequently without any dangerous results following, I am convinced, but the danger always exists. Fluids thrown into the tympanic cavities may be retained until absorbed. According to Mr. Yule's experiments, the resistance of the tubes is greater from above downwards through an imperforate drumhead required force sufficient to raise a column of mercury four inches. Whatever is forced upwards by pressure probably remains in great part until absorption takes place. When the current of medicated fluid from the douche is passing through the nostril into the pharynx, the act of deglutition is to be strenuously avoided, and this precaution is insisted on by the advocates of the douche as a means of treating catarrh, it being asserted that with proper care the mishap is impossible.' In spite of the utmost attention, however, portions of the fluid may escape into the throat below the palate, and swallowing involuntarily taking place the risk of entrance of some of the solution into the open tubes is great, and upon the distance which it penetrates the risk of sac disturbance depends. When this risk is considered fully, the grave consequences of suppurative inflammation being remembered, it becomes evident that the apparently simple and useful nasal douche is really a dangerous instrument, and its use should be discarded, except under conditional and exceptional circumstances. [In a paper read before the British Medical Association, at Sheffield, in August last, Mr. Lennox Browne drew attention to the dangers of the nasal douche, and its liability to cause disease of the middle ear. In the place of the anterior nasal douche he advised the use of the posterior nasal douche, and of vapour-inhalations by mouth and nose.—*Rep.*]

MARTIN ON A FOREIGN BODY IN THE GLOBE OF THE EYE FOR FOURTEEN YEARS.—In the *Recueil d'Ophthalmologie* for October, 1876, Dr. Martin of Marseilles relates a very remarkable case. The patient, aged forty-five, presented himself at Dr. Martin's clinic about four years ago. He complained then of violent pains in the left eye, radiating towards the temple and frontal region, photophobia, lacrymation, etc. His medical attendant had treated him with antiphlogistics, etc., for some weeks, and put down the affection as due to a rheumatismal diathesis. The patient stated that for a long time he had been taken suddenly every year, in spring and autumn, without apparent cause, in the same way,

with frightful pain, which obliged him to keep his room for a month, and undergo severe treatment. Surprised at this account, Dr. Martin examined the eye carefully, and, in spite of acute symptoms of iritis, employed oblique illumination. 'This examination demonstrated the existence of a small blackish pyriform body about the thickness of the head of a pin, with its base on the crystalline and inferior and external border of the pupil; it manifestly projected at one point. The cornea was perfectly healthy, and presented no trace of an old wound. The little tumour in no respect resembled a tumour of the iris. I immediately thought of a foreign body, and informed the patient of the result of my examination and my diagnosis. I could not convince him for some time, and it was not until he had exercised his memory that he remembered that his first ocular trouble followed a blow received in the workshop (marble works). He told me then that fourteen years previously he had been obliged to remain in a dark room, and that every year since that time he had had these internal ocular inflammations. The patient, now convinced, wished to be relieved. The only indication was to remove the foreign body; to this he consented, and the operation was performed the same day.' The cornea having been punctured at its inferior external border with a large lance-shaped knife, the aqueous humour was allowed to flow slowly out, for fear of the foreign body disappearing behind the iris. The forceps was then introduced into the anterior chamber, and the hard and black body, which consisted of a triangular fragment of marble, was easily seized. A slight protrusion of the iris occurring, the operation was completed by the excision of the protruded portion. The sequelæ were simple, the pains disappeared the same day, and at the end of a week the patient left perfectly cured.

For five years the eye has been well, and vision completely preserved.

W. DOUGLAS HEMMING.

POLITZER ON THE TREATMENT OF CHRONIC PURULENT CATARRH OF THE MIDDLE EAR.—After a long experience of the various astringents used in chronic purulent otorrhoea, Prof. Politzer gives in a short paper in the *Archiv für Ohrenheilkunde* for April his opinion on their comparative efficacy. Happily, he gives a decided opinion, and it is in favour of powdered alum and nitrate of silver. His method of applying these is as follows. The ear having been cleared of secretion by Politzer's method, or by the catheter, ten to fifteen drops of a nitrate of silver solution, of a strength of one of nitrate to ten of water, are passed into the ear, the patient inclining his head so that the fluid gravitates into the cavity. After it has remained there from one to two minutes, the surplus is washed out with lukewarm water. This is repeated daily eight or ten times; and, should the otorrhoea not then have ceased, powdered alum is blown into the ear by means of a quill or catheter, care being taken that it reaches the drum and lining membrane of the middle ear. This is left for two or three days, and then examined. Should the alum be then lying dry on the membranes it is not disturbed, but allowed to break down and fall out of itself. Should it be found moist and mixed with secretion, it is washed carefully out, the parts thoroughly dried, and nothing done for twenty-four hours. If secretion then exist, alum is again introduced and treated as before.

[This method has been often used in England since Dr. Politzer proposed it in 1868, and with good results. The use, however, of such concentrated solutions of nitrate of silver is not always safe, and consequences arise which are distressing both to patient and to practitioner. The application of the powdered alum is followed in some cases by an irritable affection of the skin of the meatus. These results can be avoided by limiting the use of the silver solution to the parts to which it is desired to apply it, by soaking some absorbing material in the solution, fastening it on a probe, and so applying it, and by limiting the application of the alum to the affected membranes. These minutiae of application can be carried out in private practice, but not in a large hospital clinique.—*Rep.*]

VOLTOLINI ON A NEW METHOD OF RHINOSCOPY. Professor Voltolini, of Breslau, describes in the *Monatsschrift für Ohrenheilkunde* for August a method by which the floors of the nasal cavities and the pharyngeal orifices of the Eustachian tubes may be examined. These regions are, in favourable cases, seen by the methods already in use; but it is only in exceptional cases that even one well practised in rhinoscopy gets a view of them. The method which Voltolini proposes is simple. The patient places and keeps his tongue in the position required, and the uvula is also set aside by any of the usual methods. The surgeon employs two separate laryngeal mirrors, their sizes corresponding to the pharyngeal space about to be examined. The first mirror introduced must have a longer handle than the usual laryngeal mirror, and be capable of being bent as desirable. A slight curve is given to it at the part next the handle, so that it passes over the tongue easily; and at the part which reaches the posterior pharyngeal wall it is bent to a right-angle. The mirror at the end is passed upwards to the basis cranii, and so placed opposite the posterior nasal orifices. The second mirror is the usual laryngeal mirror, the back of which is pressed against the handle of the other where it first ascends into the pharyngeal space. Light is thrown upon the shorter mirror, which reflects it to the longer, which again reflects it to the spot to be examined, an image of which is returned in the same way.

URBANSCHITSCH ON THE INFLUENCE WHICH THE POSITION OF THE HEAD HAS ON THE INTENSITY OF A CURRENT OF AIR DRIVEN INTO THE EUSTACHIAN TUBE.—The July number of the *Monatsschrift für Ohrenheilkunde* contains a paper on the above subject by Dr. Urbanschitsch of Vienna. He finds that in several cases Politzer's method was effectual only when the patient's head was inclined to one or other shoulder. Manometrical observations gave the same result. When a manometer was attached to each meatus, and a current of air driven into the naso-pharyngeal space, the action on the column of fluid was equal in both manometers, the head being erect; but on inclining the head to a side, it was often found that the fluid in the manometer attached to the ear which was uppermost was more affected than that in the ear pointing downwards.

To determine if the cause of this could arise from some change in the nasal spaces, he constructed a wooden model of these, and by experiments with this model concluded that the position of the head had no influence on the current as it passed through

them. He concludes, therefore, that the position of the head acts on the opposition which the mouth of the Eustachian tube offers to the rush of air against it. He believes that there is an increased action of the tube-moving apparatus on the uppermost tube, whereby the opening of the tube is more favoured, and therefore a decreased opposition to the entrance of air, when the head is inclined to the side; while the muscular structure of the other tube is unaffected.

MOOS ON THE CONNEXION BETWEEN EPILEPTIFORM PHENOMENA AND DISEASES OF THE EAR.—In the *Archives for Ophthalmology and Otology* for 1876 is the report of a lecture by Dr. Moos on the above subject, translated by Dr. Burnett, of Philadelphia. He considers that the diseases of the brain and its appendices, which occur as complications in diseases of the organ of hearing, may be divided into two groups, viz. (1) those diseases which are to be regarded as the result of a direct passage to it of an inflammatory process; (2) those diseases which, according to the present status of nerve-pathology, we are compelled to believe to arise by being centrally conveyed from the seat of irritation, and produce processes in the brain which are manifested again peripherally. The latter are the affections of which Dr. Moos speaks in this paper, and to them he applies the term reflex neuroses. These reflex neuroses consist of attacks of sneezing, coughing, vomiting, epilepsy, hemiplegia, and psychoses. After giving a short review of the literature of the subject, he gives an account of a case of reflex epilepsy observed by him lately. A boy, eight years old, was brought to the aural clinique on account of frequent attacks of ear-ache, discharge, and deafness. Between these attacks of ear-ache the patient had attacks of unconsciousness, ushered in regularly by 'great sleepiness and great diminution of the hearing, and sometimes vertigo, headache, and palpitation of the heart.' These attacks of unconsciousness lasted from two to three hours, during which the patient did not fall, and had no convulsions, but remained unconscious and speechless, his gaze being fixed. The still greater diminution of hearing was so marked in the later stage of the disease, that when it occurred the relatives of the child predicted one of the attacks just described with invariable certainty. The attacks disappeared with vomiting, and then consciousness returned. The objective examination gave the following. On both sides the membranæ tympanorum were considerably drawn in, and they appeared tightly stretched over the promontory. The short process of the hammer, and the posterior fold of the membrana tympani, were sharply prominent, and the manubrium appeared perspectiveforeshortened. These symptoms were caused by an excessive catarrhal disease of the nares and naso-pharyngeal space. This being treated in the usual method, and inflation of the tympanic cavities being effected by Politzer's method, and by paracentesis, all the reflex symptoms passed off, and no epileptiform attack had occurred since the commencement of the treatment till the patient was last seen, nearly a year afterwards. No other treatment was adopted, and Dr. Moos thinks that in this case the *post hoc* must be admitted to be *propter*.

W. LAIDLAW PURVES.

SPAMPINATI ON TREATMENT OF DILATATION OF THE LACRYMAL SAC BY INJECTION OF PERCHLORIDE OF IRON.—Dr. Spampinati (*Movimento*

Medico-Chirurgico of March 7, and *Annali Universali*, August), in cases of narrowing of the nasal duct with dilation of the lacrymal sac, follows the process which he has seen employed by Del Ponte, namely, puncture of the sac and dilatation with a lead or catgut sound. Spampinati endeavours to obtain contraction of the lacrymal sac by injecting perchloride of iron: A lady had a soft lacrymal tumour of the size of a small nut. On pressure, mucus mixed with tears escaped through the puncta lacrymalia. The skin covering it was of unusual colour. Having opened the lacrymal sac, he ascertained that the nasal duct was obstructed by fungous growths. He applied probes dipped in a solution of crystallised nitrate of silver in water (0.75 per cent.). After four months there was marked improvement, but the lacrymation continued, and the tears collected in the dilated sac. Spampinati then determined to inject with an Anel's syringe solution of perchloride of iron mixed with two parts of water, removing the liquid by the syringe after a few minutes. After the applications the lacrymation disappeared, and neither mucus nor tears collected in the sac. The same result was obtained in another patient. In both the effect was permanent, the disease not having reappeared in the first patient a year, and in the other six or seven months, after the treatment. The injections were used every day, the liquid being allowed to remain in the sac five or six minutes, and then removed by means of the syringe.

A. HENRY, M.D.

RECENT PAPERS.

- Hygienic Observations in Ophthalmic Practice. By J. Hirschberg. (*Deutsche Medicinische Wochenschrift*, Sept. 9.)
- The Therapeutic Value of Alum in Diseases of the Conjunctiva. By Dr. H. Magnus. (*Ibid.*)
- A Contribution to the Pathology and Therapeutics of Contused Wounds of the Eyeball. By Dr. Charles S. Bull. (*American Journal of Medical Sciences*, Oct. 1876.)
- Practical Considerations on Cataract. By M. Panas. (*L'Union Médicale*, Sept. 30.)
- On the Use of Nitrite of Amyl in Aural Therapeutics. By Dr. Michael. (*Allgemeine Wiener Medizinische Zeitung*, Sept. 26.)
- Removal of Grey Cataract by Von Gräfe's Peripheral Linear Incision. By Dr. S. Vidor. (*Wiener Medizinische Wochenschrift*, Nov. 4 and 11.)
- Novel Case of Parenchymatous Keratitis. By Adolphe Piechaud. (*Gazette des Hôpitaux*, Nov. 21.)
- A Refracting Ophthalmoscope. By Dr. Badat. (*Ibid.*)
- The Relation of the Ciliary Processes to Accommodation: a Case of Traumatic Total Irideremia. By Dr. J. Hjort. (*Nordiskt Medicin. Arkiv.*, Band viii.)
- On Some Diseases of the Eye in their Relation with Gynaecology. By Dr. F. Baumeister. (*Berliner Klinische Wochenschrift*, Nov. 27 and Dec. 4.)

REPORTS OF FOREIGN SOCIETIES.

IMPERIAL ROYAL MEDICAL SOCIETY OF VIENNA.

October 20, 1876.—*Skin-Eruption from Bromide of Potassium*.—Dr. Pinsker, of the Leopoldstadt Children's Hospital, in presenting a patient, said that the occurrence of cutaneous eruption after the use of bromide of potassium had been already described by Voisin, Weir Mitchell, and Neumann; but still he regarded the case which he presented as

rare. The patient was an idiotic boy aged ten. From his second year he had suffered from epileptic attacks, at first occurring at rare intervals, afterwards more frequently; and a year ago his mother sought medical advice. Five grammes (seventy-five grains) of bromide of potassium were administered daily, with occasional interruptions. In December, 1875, he was sent to the Children's Hospital as having small-pox. There was an abundant pustular exanthem on the forehead and temples and on the trunk and limbs, besides some vesicular exanthem. The history and course of the case led to the diagnosis of bromine-acne. The patient was dismissed after having been four weeks under treatment. He was again treated by bromide of potassium, in daily doses, according to the mother's account, of 45 grains. The eruption, which had lasted three months, was treated, without effect, by diachylon ointment. Within the last ten days, under purely expectant treatment, there had been a marked decrease both in the extent and the intensity of the eruption.

The Hypodermic Treatment of Syphilis.—A paper on this subject was read by Dr. Neumann. After giving a short historical sketch of the method of treatment by ingestion, and of the appearance which the various preparations of mercury produced on the skin, he proceeded to speak of the action of mercury-albuminate and mercury-peptone. He had never met with abscess or sloughing; when the pain was considerable, it depended greatly on the vulnerability of the individual, on the dexterity with which the operation was performed, and on the purity of the solution and of the cannula. An estimate of the comparative value of the fluids used for injection may be formed by selecting (*e.g.*) the skin of the back or of the side of the chest or of the buttock, and injecting into one part albuminate of mercury, into another mercury-peptone, into another an aqueous solution of corrosive sublimate, or a combination of this with morphia. It will then be found beyond doubt that the solution in albumen, recommended by Bamberger, produces the least pain and the least reaction. It is not perfectly painless; but neither abscess nor sloughing of the skin have been observed to follow the use of the solution, if pure. Dr. Neumann gave the following as the reason why the solution in albumen produces less pain than the aqueous solution. It is known that many irritants lose their caustic action when dissolved in oil, glycerine, or albumen. This is daily observed in the case of carbolic acid and caustic potash. The same is the case with corrosive sublimate, though here chemical conditions must have some influence, for the absorption of the sublimate into the juices of the organism occurs only as a result of its combination with albuminoid substances. Corrosive sublimate dissolved in water must combine with the albumen in the subcutaneous connective tissue, and this combination can only be carried into the circulation after having undergone decomposition, just as corrosive sublimate in the stomach combines first with the albuminous substances in that organ, and, if there be not enough of these, with the mucous membrane of the stomach itself, so as to produce irritation. The advantages above described as attending the use of albumen and also of peptone solutions were not met with when the injections were made into other parts than those mentioned, such as the arms or hands, or into indurated tissue. With regard to peptone-mercury,

the following was the result of experiments made on several patients. As is well known, peptone is a white amorphous body, soluble in water in almost any proportion. It causes very little pain, and produces less reaction at the point of injection than the albuminate. As regards the number of injections, from twenty to fifty are necessary to cause the disappearance of the various manifestations of syphilis. Dr. Neumann found, with other observers, that the vesicular, papular, and squamous syphilides disappeared most rapidly; one case only, of chronic macular syphilide, required fifty injections; while the eruption with small particles, and also enlarged lymphatic glands, was slow in disappearing. In cases of indurations not yet followed by general symptoms, the injections did not prevent the eruptions from appearing. Psoriasis palmaris and plantaris was rapidly relieved by the injection. Injections into indurated tissue produced circumscribed sloughing. Affections of the mucous membrane and syphilitic tubercle arranged in groups, demanded a larger number of injections. Gummata resisted injection remarkably; whether a result followed rapidly in cases of syphilitic iritis, the author could not state from his own experience. Lewin has described brilliant results in this affection. In one case of double iritis, little or no effect was produced. Dr. Neumann had injected only three centigrammes, when he was obliged to desist in consequence of cedematous swelling at the point of injection and consecutive cedema of the eyelids. He had used the injections sometimes once, sometimes twice a day, and had never met with toxic symptoms. Stomatitis occurred in two patients only, after seven and fifteen injections; the only preventive measures prescribed were, to cleanse the teeth carefully, and to rinse the mouth frequently with water. The injection treatment does not secure against relapses, but whether they appear more rapidly cannot yet be decided. Lewin observed 30 per cent. of relapses, which were, according to his statement, less severe than after other methods. The slight reaction which follows the injection of pure albumen or peptone solutions of mercury, the accuracy with which the dose can be measured, the small quantities (on an average 15 to 25 centigrammes) required to subdue the syphilitic symptoms, the freedom of the stomach from irritation, especially in debilitated persons, the cleanliness of the application, the rarity of stomatitis, and the rapidity with which cure follows the use of sufficient doses, are evident; and the rapid elimination of the mercury must relieve even the antimercurialists of fear of mischief. Dr. Neumann had in his cases not met with certain symptoms described by others, as being produced by this method, such as elevation of temperature (to 104° Fahr.), increased frequency of pulse, sleeplessness, and profuse diarrhœa.

On Mercury-Peptone and on Flesh-Peptone.—In reference to Dr. Neumann's paper, Dr. Bamberger observed that two circumstances led him to seek a new preparation instead of the albuminous solution. The solution was rather difficult to obtain in the necessary state of clearness and purity, and required long and careful filtration; and secondly, it could be kept only for a limited time. Although as clear as water at first, the fluid in four or six weeks become turbid, and threw down an albuminous precipitate. A body allied to albumen, peptone is readily soluble in water, resists the actions of heat, alkalies, and acids, can be readily filtered, and

combines with mercury. A 5 per cent. solution of corrosive sublimate, and a 20 per cent. solution of common salt were made. With one gramme of flesh-peptone, in the form of a yellowish crystalline powder, 50 cubic centimètres of water, and 20 cubic centimètres of solution of corrosive sublimate were mixed. The turbidity which resulted was removed by the addition of 15 or 16 cubic centimètres of the solution of chloride of sodium. The solution contained 1 per cent. of peptone-mercury. It can be kept for some time; a specimen prepared in the beginning of July remained clean. If any precipitate should appear, the supernatant clear fluid must be poured off. The results of injecting this solution had hitherto been largely satisfactory; it was not painless, because, just as distilled water does, it produced pains by distending the subcutaneous tissue; it should be injected slowly, and the injected fluid should be at once distributed by pressure. Dr. Bamberger had at first prepared the peptone by the action of pepsin on finely chopped meat, but latterly he had obtained it from London. It was an excellent therapeutic agent, relieving the stomach of much work, especially when the absorbent property of the organ was alone left. It was also useful in the gastric and intestinal affections of children, in ulcer of the stomach, in convalescence for acute diseases, etc. He hoped that it would soon come into extensive use.

October 27. *Comminuted Fracture of the Femur; Fatty Embolism in the Pulmonary Artery.*—Professor Heschl showed a portion of bone removed from a man who had died a few days previously in the General Hospital. He had been admitted under Dr. Billroth's care in consequence of fracture of the thigh by a fall; the constitutional symptoms were at first very slight, but he soon died, with marked symptoms of septic poisoning. The left femur, at the juncture of the third and last fourths, had sustained a comminuted fracture, which extended into the condyles. He had not only fallen, but a heavy body had fallen on him, a circumstance which always produces considerable destruction of the marrow. At the necropsy, the organs in general were found to be healthy; but the lungs, which presented no abnormal appearance to the naked eye, were found, when examined with the microscope, to have numerous fat-drops in the capillaries and arterioles. Dr. Heschl remarked that similar appearances had been described by others as following injuries of the bones, with destruction of the marrow, and that in many cases fatty embola had been found in the arteries of the brain.

The Function of the Nerves of the Blood-Vessels.—After referring to the labours of Ludwig, Cyon, Ostrumoff, and Goltz, Professor Stricker described the researches which he had made on the so-called vaso-dilator nerves, in order to ascertain their origin, and whether it was possible to isolate them. He divided the spinal cord of dogs between the seventh and eighth dorsal vertebræ; and, when the animals had recovered, he applied various irritants to the roots of the spinal nerves, and observed, by means of a thermometer fastened between the toes, the effects produced on the cutaneous temperature. The last pair of lumbar nerves was specially examined. He separated the posterior from the anterior root, tied the former, and divided it behind the ligature. If the animal's paw were at rest, and showed a constant temperature (between 68° and 71.5° Fahr.) it was observed that, when the nerve was irritated by the

application of a second and a third ligature, the temperature always rose rapidly to 86° or even 95° Fahr. This rise of temperature lasted only a few minutes, proving that it was the result of irritation and not of paralysis of the nerves of the vessels; in the latter condition, the elevations of temperature often continue through an entire day. It was a remarkable fact that the posterior or venous roots conveyed centrifugal impulses. Dr. Stricker here called to mind the observation that neuralgia begins with hyperæmia, and remarked on the connection between disease of the nerve-ganglia and herpes zoster. He found also that the nerves of the vessels pass directly into the sciatic, and that this nerve receives but an inconsiderable number of vaso-dilator nerves from the roots of the spinal nerves above it.

Simulated Diabetes.—Dr. Abeles said that in 1875 he had under treatment in Carlsbad a lady, aged twenty-eight, who was said to have diabetes mellitus. She had first had hæmaturia. On examining the urine, which had a specific gravity of 1040, he at first found no sugar; but, after a few days, he found 9 per cent of sugar. Appropriate diet was prescribed. At the next examination, the urine had a specific gravity of 1074, and the polarising apparatus indicated 22.5 per cent. of sugar; which, however, acted on copper or bismuth solution only when boiled with dilute acid. All this, with other evidence, convinced Dr. Abeles that he had to deal with cane-sugar, which was mixed with the urine. The patient's urine was obtained without her knowledge, and was always found to contain a considerable quantity of cane-sugar; once only, shortly before her departure, it was free from sugar. The following year she returned; and her urine, on examination, was found to contain grape-sugar. Some which was removed by the catheter contained 16 per cent. It was suspected that the patient herself introduced the sugar into the bladder. She otherwise presented no hysterical symptoms. The urine, examined shortly before her departure, was still found to be of abnormally high specific gravity and to contain large quantities of grape-sugar.

November 3. *The Supracondyloid Process in Man.*—Dr. C. von Patruban had for some years collected statistics regarding the supracondyloid process, the relations of which to the muscles, vessels, and nerves, were almost constant. The subject was of practical importance, inasmuch as persons who had this process—especially if they happened to have glandular swellings—were sometimes regarded as syphilitic, and treated with mercury. A supernumerary head of the pronator teres always comes from it; and the brachial artery with its venæ comites and the median nerve and lymphatics always pass behind it. M. Gruber has shown that this process forms a canal, to which he gives the name of canalis fibro-osseus. Dr. von Patruban showed the process in a number of preparations.

A Rare Injury of the Ankle-joint.—Dr. von Patruban described this case. A strong well-nourished woman, aged forty-five, was removing an iron stove, and in descending a ladder with her burden, caught her foot between two bars. When she regained consciousness, she observed a wound two inches and three-fourths long on the dorsum of her right foot. The surgeon who was called in sent for Dr. von Patruban, who, on removing the coagula, found the body of the astragalus lying detached, and removed it. The foot was dislocated outwards. The displacement was reduced, and the wound

cleaned and dressed, the foot being put up in an elevated position. At the end of six weeks, the woman had good use of the foot.—Dr. Dumreicher related two cases of complicated dislocation. A woman, while on a ladder, slipped, and fell from a height of about three feet, on the outer side of her foot. On the inner side of the foot there was a lacerated wound, in which lay the astragalus, connected only by thin fibres with the rest of the foot. The bone was removed, and the limb put up in a Petit's boot; recovery took place in four weeks. The second case was that of a man who, in descending from a wagon, came down on the outer side of his foot, which was dislocated, and could not be replaced. When he was seen, some days after the injury, there was considerable swelling, with sloughing of the dorsum; a comminuted fracture of the astragalus was detected by means of a probe. Five pieces were removed, and recovery took place in five weeks.

Myxoma of the Labia Pudendi.—Dr. Patruban showed a myxoma, which he had removed from the labium of a female, aged sixty. It commenced as a sessile pigmented wart, which gradually increased to the size of a small apple, and became provided with a pedicle several centimetres long. This last circumstance was, in Dr. Patruban's opinion, very exceptional, and difficult of explanation.

MEDICAL SOCIETY OF BERLIN.

May 17, 1876.—*Rare Disease of the Larynx.*—Dr. B. Baginsky showed a boy, aged twelve and a half years, the subject of a diseased condition of the larynx and trachea which he had not found described in literature. The disease occupied the larynx and trachea, which could be examined by sunlight or by good artificial light as far as the eighth or ninth ring. For some time the boy's mouth had had a disagreeable smell, and he had coughed up offensive greenish masses; in other respects his health was good, he was fairly well developed, and there was no family history of scrofula or syphilis. There was slight pharyngeal catarrh, and swelling of both lower nasal fossæ. On examination with the laryngoscope, between the true vocal cords and on the wall of the thyroid and cricoid cartilages, and especially in the trachea, there were seen soft greenish-grey masses, firmly adherent to the mucous membrane, from which small portions were occasionally dislodged by coughing. Between them the mucous membrane was denuded of its epithelium, eroded, and bleeding readily. Treatment by inhalations of carbolic acid, solvents, and astringents, and the internal use of syrup of iodide of iron, had as yet been without result. Microscopic examination of the green masses showed a quantity of epithelium that had undergone fatty degeneration, with crystals of tyrosin and small moving corpuscles. The disease had a great resemblance to nasal ozæna, and the condition called by Waldenburg pharyngitis impetiginoides. Dr. Baginsky believed that it was not analogous to putrid bronchitis; in this disease, the expectoration was very abundant and fluid, while in the present case it was very scanty. From the resemblance to nasal ozæna, he would propose for it the name of laryngo-tracheal ozæna. The prognosis was unfavourable, as perichondritis was to be feared. Dr. Baginsky also showed in the same patient a specimen of benign mycosis of the pharynx.—Herr B. Fränkel said that he had several

times seen the patient. He had seen several cases of ozena of the larynx, and had referred to them in his article on Ozena in Ziemssen's *Cyclopædia*. But, until he saw this case, he had never met with one in which the foetid masses were below instead of above the vocal cords. As regards the foetid masses in the trachea, he had found much fatty epithelium and fungi; and also crystals of tyrosin. He could not determine whether there was any connection as regarded cause between the foetid deposits and the mycosis of the pharynx. However this might be, leptothrix was present in both.

May 31. *Wound of the Hand*.—Herr Bardeleben described the case of a woman who had been wounded by a sharp hatchet during a quarrel with her husband. On her admission into the Charité Hospital, she had a gaping wound on the forehead, reaching to the bone; and there were numerous wounds on both hands, especially the right. The metacarpal bone of the thumb was cut through, and many of the carpal and carpo-metacarpal articulations were laid open, and several tendons were divided. When Herr Bardeleben saw the patient, every preparation had been made for amputation; but he determined to trust to antiseptic dressings, and to endeavour to preserve the hand. The result was that recovery took place with a very useful hand; the fingers retaining a considerable amount of mobility in spite of the injury of the tendons. No sutures were applied to these.

Morbid Conditions following Vaccination.—Herr Goldschmidt showed a child which he had vaccinated on the left arm a fortnight previously. The pustules were at first normal, but assumed a phagedænic character, and similar ones were observed below the right eye and on the labia pudendi.—Herr Lewin remarked that the pustules on the labia were very like broad condylomata. The case might possibly be of syphilitic origin.—Herr B. Fränkel could not see the resemblance to condylomata. The pustules in the labia and below the eye had distinctly the characters of vaccine pustules.—Herr O. Simon believed that the labia and face had been infected by means of the child's finger. He did not believe that the affection was syphilitic.—Herr Goldschmidt could not acknowledge that syphilis had been communicated. In a number of other children vaccinated with the same lymph, the vaccine had ran a normal course. The child was perfectly well when it was vaccinated.

June 14. *Aphonia*.—Dr. B. Fränkel showed a man who had aphonia, but could speak aloud when his tongue was protruded. The affection was said to have come on after a severe febrile illness. On laryngoscopic examination, nothing abnormal could be found, and Dr. Fränkel believed the affection to be of hysterical nature.

Miliary Tuberculosis of the Pharynx.—B. Fränkel read a paper on this subject.

Influence of the Nerves on Diseases of the Skin.—Herr G. Lewin made a communication on this subject, and exhibited a patient.

June 28. *Case of Intra-Uterine Repair of Epispadias with Fissure of the Bladder*.—Herr E. Küster described this case. A child named Arthur Schulz, aged 1 $\frac{3}{4}$ years, had a perfectly developed epispadias with an urethral furrow on the upper surface of a shortened penis; there was also fissure of the symphysis pubis, and a wide gap in the abdominal muscles, the umbilicus being absent. The urethra, however, had its upper wall represented by

a thin cicatrised mass; there was a ligamentous mass at the symphysis, and the anterior wall of the bladder was represented by a cicatrix. The permanent incontinence of urine led the parents to bring the child for advice. At the root of the penis there was a narrow stricture, through which only the smallest catheter could be introduced. The existence of a vesical space could be distinctly made out: the sphincter vesicæ was present, but was cleft. Analogous occurrences are not wanting in the human body; intra-uterine repair of hare-lip and cleft palate have been met with in several cases.

ACADEMY OF MEDICINE OF PARIS.

October 24. *Accidents in Hunting*.—M. Galezowski read a paper on accidents in hunting affecting the eye, and the means of avoiding them, by the use of rock crystal, or toughened glass spectacles. Experiments made by him on such spectacles showed that the projectile ricochets, and does not touch the eye, which is thus preserved.

Gastrostomy.—M. Verneuil made an interesting communication on a case of gastrostomy. This operation, proposed and originally performed by M. Sédillot, since then performed unsuccessfully sixteen times, has this time been crowned with complete success, under the hands of M. Verneuil. Gastrostomy, literally stomacal mouth, is an operation analogous to that for artificial anus; it has been proposed to remedy impassable strictures of the œsophagus, condemning the unhappy sufferers to a certain death; generally, carcinoma or epithelioma of the œsophagus are in question, which have already induced profound cachexia. M. Verneuil's patient presented other conditions. He was a young man of seventeen, in habitually good health, who by accident swallowed a solution of caustic potash, on February 4, 1876. He immediately felt an intense burning in the throat, and soon vomited *débris* and fragments of mucous membrane. These symptoms of acute œsophagitis were quieted at the end of a fortnight, but when he tried to eat he experienced the greatest difficulty in so doing. He continued to work up to the end of March, when he went into the Pitié Hospital under the care of M. Dumontpallier. Catheterism was unsuccessfully attempted several times, and M. Dumontpallier transferred the patient to M. Verneuil's wards, where he entered on May 24. The patient was extremely emaciated, pale, and very much enfeebled; his temperature was below normal; he could not swallow. Catheterism of the œsophagus showed a very much constricted stricture at about seven centimètres below the upper orifice of the œsophagus, at a point where external œsophagotomy was impossible. M. Verneuil decided on performing gastrostomy. M. Léon Labbé, who was called into consultation, gave his advice in the conduct of the operation. No precaution was neglected. All the instruments were dipped in a solution containing a twentieth part of carbolic acid; the sponges were steeped over night in the same solution, with which the surgeon and his assistants washed their hands; the suture-needles were anointed with carbolic acid; finally, throughout the operation a jet of carbolic water-spray was directed on the wound. The patient was chloroformed, and an incision was made, five centimètres long, parallel to the edges of the left false ribs, and consequently oblique

downwards and outwards. The incision was made into the skin, the subcutaneous cellular tissue, and the great oblique muscle; the peritoneum was then reached, which was raised with a pair of claw-forceps and divided with scissors. The stomach, easily recognised by its white colour, was seized with claw-forceps; it was drawn into the wound, and two long acupuncture needles passed through it perpendicularly to the lips of the incision, so as to keep the stomach-wall in contact with them. The edges of the peritoneal opening were then taken hold of with hæmostatic forceps, held by the assistants; a metallic suture fixed the peritoneum to the wall of the stomach with fourteen loops, tightened with a leaden tube over a shirt button; the two large acupuncture needles were afterwards removed. This done, the wall of the stomach was cut into, the thickness being considerable, and in no way resembling what is seen in the dead body; across the opening thus made was introduced a large tube of vulcanised India-rubber, and was fixed with a silver thread, which also passed through the stomach-wall. From seven to eight centimètres of the tube passed into the stomach. The incision of the stomach brought on a copious hæmorrhage, which was stopped by hæmostatic forceps; the abdomen was then covered with collodion, and the operation was finished. No accident supervened, the sutures fell off quickly, and after the first few days the patient was able to take liquid food by the stomach. At the time the operation was performed, the patient weighed thirty-three kilogrammes; the next month he weighed thirty-four, and at the time M. Verneuil read his paper, forty-two. He takes food and benefits by it; his appetite is good. When food is poured into the stomach, his mouth performs masticatory movements. The success of the operation, therefore, is complete. M. Verneuil insisted on the considerable difference existing between his patient and M. Beaumont's famous Canadian, who could swallow, and took his food by the mouth, whilst the patient in question is suffering from an impassable stricture of the œsophagus, which will probably end in complete obliteration. He appears destined to suffer from this affection all his life, and to feed himself by the injection of nourishing foods into the stomach.

October 31. *Cauterisation of the Pharyngeal Mucous Membrane in the Treatment of Amnesia.*—M. Bitot pointed out the good effects obtained in certain cephalic neuroses, notably in amnesia, by the cauterisation of the back of the throat. He comes to the conclusion that it is by the medium of the superior cervical ganglion that this modification of the pharyngeal and mucous membrane produces these favourable effects.

Feeding of New-Born Infants.—M. Hervieux, reverting to the question of the alimentation of newborn children, contested the opinions expressed by M. Magne, and protested against the theories which ranked human nurslings with young animals. Milk only will suffice for alimentation up to the fifteenth month; if it be impossible for the mother to suckle, resort must be had to pure cows' milk. Mixing water and alimentary substances with milk is the origin of a great many of the affections of early infancy.

November 7. *Feeding of New-born Infants.*—M. Devergie laid before the meeting some reflections on the quality of the milk and the selection of the nurse. The microscope affords valuable indications on the amount of fat-globules and the choice of the nurse. Large breasts do not give the purest

milk. It is the form that exercises an influence on the qualities of the nurse; pyriform breasts are generally an indication of a good nurse.

Stricture of the Urethra.—M. Lefort gave a description of his method of treatment in strictures of the urethra by immediate and gradual dilatation. He inserts in the stricture a fine bougie, having at the extremity a piece of metal without a screw. He screws to it a small plate which keeps it in its place for at least twenty-four hours. The mucous membrane, owing to the presence of the bougie, secretes and becomes supple to such an extent that the bougie which was at first confined in it works freely. This accomplished, he unscrews the plate and replaces it by a conical bougie, of which the diameter at the point is similar to the flexible bougie and of which the largest diameter corresponds with Charrière's No. 10. He inserts the metallic bougie into the canal, and it pushes before it the flexible bougie which draws itself back into the bladder; he gently inserts the sound which cannot go astray owing to the conducting bougie, and the dilatation is begun. He then replaces No. 1 sound by No. 2, of which the diameter is the same at the point, but which increases until it equals No. 15 of the gauge; he then introduces No. 3, which, in the largest part, equals No. 20 of the gauge. When this is done, the stricture is at an end, the patient is instructed how to apply the sound for himself, and the surgeon's business is finished.

Feeding of New-born Children.—M. Blot, in relation to the feeding of new-born infants, said that he believed that it is a pure prejudice to think that the age of the nurse's milk should correspond with the age of the child. More mature is often preferable to very young milk.—M. Devergie protested against this view, which he asserted to be contrary to the laws of nature; he believed that there is a distinct advantage in taking a nurse whose milk is as nearly as possible the same age as the infant.

Properties of Maize.—M. Fua, of Padua, read a memoir on the hygienic and therapeutic qualities of maize. He believed that the use of this food calms the passions, and should be employed in the violent delirium of insanity. Pellagra has been wrongfully attributed to the use of maize, but it is due solely to poverty and debilitating influences. Maize is really a very healthy food, valuable for its nourishing as well as for its therapeutic properties.

ACADEMY OF SCIENCES OF PARIS.

Igneous Utero-Vaginal Myotomy.—M. Abeille submitted clinical observations on the cure of hypertrophic elongation of the neck of the uterus by igneous utero-vaginal myotomy. The writer had already made known the successes which he had obtained by this method in flexions of the uterus. He now demonstrated that he could radically cure the hypertrophic elongation of the whole of the neck and part of the body of the uterus; whether it be accompanied or not by prolapsus of the organ, and narrowness of the meatus, whatever may be its complications.

October 30. *Cholera.*—M. Ch. Pigeon presented a memoir entitled *Refutation of the Doctrine of the International Congress of Constantinople on the Cholera.*

The Embryo in the Hen's Egg.—M. Daresté communicated his researches on the nutrition of the embryo in the hen's egg. The albumen necessary for

the nutrition of the embryo does not contribute to the nutrition of the blastoderm itself. This seems rather to develop itself at the expense of the yolk.

Influence of Poisoning by Agaricus Bulbosus on the Formation of Sugar.—M. Oré contributed a note on this subject. 1. In dogs which have succumbed to the action of agaricus bulbosus saccharine matter is neither found in the blood, nor in the liver, eighteen, eight, six, or five hours after death. 2. On the contrary, saccharine matter is found, and that constantly, in all the animals on whom these mushrooms have been employed; if the blood in the liver be examined immediately before death or immediately after. 3. The absence of sugar in the first-mentioned is not therefore connected with a destructive influence exercised by the agaricus bulbosus on the glycogenic function; it confirms the theory that M. Claude Bernard formulated some time since in these terms: 'Sugar does not regenerate itself in the blood after death, but it continues to destroy itself there; that is why no more is found, neither in the blood-vessels nor in the heart at the end of a certain time; but if this negative experiment made after death leads to the conclusion that sugar is not present in the blood, during life an absolutely false conclusion will be arrived at.'

The Employment of Picric Acid in the Treatment of Wounds.—M. Eugène Curie recommended picric acid in a watery solution with which the dressings are saturated, or, better still, picrated wadding, that is to say, pieces of dry wadding in which picric acid has been incorporated; the last method is generally the most convenient in application. This method, according to the author, affords the advantage of completely suppressing suppuration.

November 6. *Use of Iodides in Lead-poisoning.*—M. Faure forwarded a note on the efficaciousness of the iodides in lead-poisoning. These observations had been made by the writer in a white-lead factory, his own property. He made the experiment on himself after a very prolonged period of poisoning, and a partial cure only by the usual remedies; he obtained excellent results by a treatment of iodide of potassium, administered in doses of two centigrammes. After that time, and notwithstanding an excessive sensitiveness to saturnine emanations, he had always successfully overcome frequently repeated poisonings. M. Faure was of opinion that a workman sufficiently intelligent to determine the quantities he ought to take, would always obtain the most satisfactory results, by a treatment consisting of doses of from 5 to 10 centigrammes of iodide of iron or potassium, without being obliged to interrupt his work.

REVIEWS.

A Treatise on the Theory and Practice of Medicine.

By JOHN SYER BRISTOWE, M.D. London, F.R.C.P., Physician to St. Thomas's Hospital, Joint-lecturer on Medicine at the School, and Examiner in Medicine to the Royal College of Surgeons; formerly Examiner in Medicine to the University of London, etc., etc. London: Smith, Elder, and Co. 1876. Pp. 1166.

Our medical students have now no lack of text books in medicine. We only lately reviewed Dr. Roberts's Manual, whilst those of Watson, Aitken, Tanner, Austin Flint, and others, have each their

admirers, and their own special excellences. As a rule, the one-volume treatises are the favourites for reading for examination. In the present volume (which is a thick, large octavo, well got up, and with singularly few misprints), we have a work by one who has long been, and still is, not only a lecturer, but an examiner in the very subjects of which he treats. It may therefore be assumed with some show of probability, that the author has kept in mind the special needs of medical students. Nor is the expectation disappointed when we open the book. But it must not be assumed that this volume is for students only who are reading for examinations. It well deserves a place in the library of every physician and of every practitioner of the medical art. It does not deal with obstetrics proper or the surgical diseases of women, but apart from these, those diseases of the fair sex which have a general interest for all practical men, such as metritis, oöphoritis, ovarian cysts, etc., are mentioned (somewhat briefly it is true) in their place. After a very excellent summary of the general principles of medicine and pathology, the febrile exanthemata are discussed in about 150 pages. Skin-diseases take 50 more, then come diseases of the respiratory and circulatory organs, which bring us up to the 564th page. Diseases of the ductless organs and blood, of the digestive tract, including the liver and pancreas, and of the genito-urinary organs occupy about 300 pages more. Gout, rheumatism and their allies, rickets, mollities ossium, and pseudo-hypertrophic paralysis, are all grouped together as diseases of the organs of locomotion; we presume for the sake of convenience, rather than for any more scientific reason. Then the last 200 pages or so of the book are filled with an account of the diseases of the nervous system. This was rather the weakest point of Dr. Roberts's book. It seems to us the strong point of Dr. Bristowe's. How well he enters into all these subjects, will be seen from the account of radial or musculo-spiral paralysis which we extract.

As might be expected from Dr. Bristowe's antecedents, pathology and prophylaxis are most carefully rendered, and form a distinguishing feature of the work. As in all the modern works on physic, the treatment of disease receives less attention in this treatise than its diagnosis and *post mortem* phenomena. We think this is to be deeply regretted on more grounds than one. The neglect of treatment on the part of orthodox practitioners is the stronghold of quackery. The self-dubbed Doctor Smell-fungus, graduate of a college *in nubibus*, sees a patient, relieves his pain, gives him tranquil nights, and at least a few days of enjoyable life, whilst the graduate in honours of old and celebrated universities, who is perhaps, in addition, Member or Fellow of Royal Colleges of Physicians or Surgeons, sends the patient away, or leaves him, after making an elaborate diagnosis, with some peppermint water, or some other equally futile prescription, which affords no relief either to his body or to his mind.

Dr. Bristowe's book is no worse than others in this matter. It is perhaps rather better. But unless something be done to advance the study of rational therapeutics, quackery must and will flourish in our island. We must, too, reckon as a minor blemish the sort of careless style in which the writer discusses the operation of paracentesis thoracis, or thoracocentesis. To tell medical students that 'it is indeed of little consequence if, in attempting it, we wound the lung or the kidney or other

neighbouring organs' (p. 425) is, in our humble opinion, to encourage a recklessness which is, to say the least, unscientific. There is no need to wound any of the organs named. *Experto crede.* We speak of things we know, having performed and witnessed the operation named, not in one or two, but in several hundred instances.

But apart from this, the work is one that will greatly enhance its author's reputation. We prophesy that it will be the favourite for the examinations of the London and other universities and the College of Physicians; whilst many who never pass these examinations, but content themselves with Hall and College, will be glad to purchase a book which, once acquired, they will not wish to part with, but will carry with them to their residence in the country, or to the distant colony, on board ship, and even in the knapsack on the march with troops. As a specimen of the style, as well as illustrating the careful treatment which nervous diseases receive, we quote from the description of 'Paralysis of the Spinal Nerves,' (pp. 1115, 1116).

'*Causation.*—Paralysis of these nerves may arise under various conditions; but we propose to refer only to those varieties which M. Duchenne speaks of as paralysis from cold, and in which the paralysis is due to inflammation of the trunk of the affected nerve. These affections are not uncommon, and may be readily mistaken for ordinary rheumatism.

'*Symptoms and Diagnosis.*—The symptoms comprise pain and tenderness in the course of the affected nerves, and febrile disturbance, together with the various consequences of disease involving mixed nerves, namely on the one hand, burning or shooting pains, in the course of the branches of the implicated nerve, and hyperæsthesia followed by tingling and numbness; on the other hand, muscular paralysis, followed by speedy loss of electric contractility, and wasting. The muscular paralysis for the most part comes on later than the symptoms referable to sensation. During the early period of the disease the temperature in the affected parts is augmented, later on it undergoes manifest diminution.

'M. Duchenne singles out two forms of this affection for description, one of which he terms "deltoid rheumatism," the other "paralysis of the radial nerve." Affection of the spinal accessory is also not uncommon.

'1. *Deltoid Rheumatism* is essentially inflammation of the circumflex nerve. It is marked by the occurrence of violent neuralgic pains in the deltoid muscle, sometimes coming on in paroxysms, and augmented by any movement of the shoulder. In voluntary movements pain is especially excited in those fibres which are brought into contraction, a circumstance which will help to distinguish the affection from ordinary articular rheumatism. The symptoms may last for a few days only, or be prolonged for months. In many cases convalescence takes place without the occurrence of complications, but in some cases atrophy of the deltoid, or of some part of it, supervenes after the pains have continued for awhile; and when at length, under these circumstances, the pains have subsided, the muscle continues atrophic although retaining its voluntary and electrical contractility. In other cases paralysis attended with more or less complete abolition of electrical contractility supervenes in the course of the disease.

'2. *Paralysis of the Radial or Musculo-Spiral*

Nerve, is sometimes referred to pressure on the nerve, occurring, for example, during sleep, but by M. Duchenne is attributed (like Bell's paralysis) to exposure to cold, especially to exposure of the arm during sleep to a current of cold air, or to cold and damp. It generally comes on suddenly, without pain or tenderness, but with numbness or tingling, extending to the tips of the fingers. The paralytic symptoms have a very close resemblance to those of lead poisoning, and, like these, comprise as an essential feature dropping of the hand, and inability of extending the fingers. The differences between them are, as M. Duchenne points out: first, that in paralysis from cold the paralysed muscles retain their electrical contractility unimpaired, whereas in lead palsy this quality rapidly diminishes or disappears; second, that the supinator longus, which never suffers in lead poisoning, is invariably implicated in the present case. The proof of implication of the supinator longus is obtained, according to M. Duchenne, in the following manner. "If, when the patient has placed his forearm in the position of semiflexion and semipronation, he attempts to flex it more completely (the attempt being opposed), the long supinator can neither be seen nor felt to contract. This is the indication of paralysis of this muscle, which, as I (M. Duchenne) have proved experimentally, is the flexor of the forearm while it occupies the semi-prone position."

'As in lead-palsy, the flexor muscles of the forearm and hand and the interossei escape. Paralysis of the musculo-spiral nerve from cold is almost always followed, sooner or later, by recovery. In some cases, however, progressive wasting of the affected muscles comes on; and occasionally, also, the opposing muscles and the interossei become manifestly enfeebled from want of use.

'*Treatment.*—The value of galvanism in the treatment of the above forms of paralysis is very great. When the deltoid pains are unattended with fever or local signs of inflammation, M. Duchenne strongly recommends the use of cutaneous faradisation, effected upon a dry surface, with a feeble and slowly intermittent current. When, however, there is wasting or paralysis, faradisation of the muscles or the continuous current is especially indicated, both in the case of the deltoid and in that of the muscles of the forearm. In both of these cases, moreover, frictions, stimulant applications, and blisters are often serviceable. When there is distinct evidence of inflammation, the various forms of galvanism are not only inefficacious, but injurious. The ordinary remedies for local inflammation are then called for.'

Dr. Bristowe's section on the condition of muscles in motor paralysis, and the paragraph relating to aphasia as a symptom in hemiplegia (pp. 927 and 944, etc.), may be mentioned as especially good parts of a volume which is of more than usual excellence as a manual and index of diseases.

W. BATHURST WOODMAN.

Transactions of the College of Physicians of Philadelphia. Volume IX. (Third Series, Volume II.) Philadelphia: Printed for the College, and for sale by Lindsay and Blakiston. 1876.

This handsome 8vo volume of 186 pages is well printed and almost profusely illustrated, for there is a chromolithograph and twelve woodcuts to illustrate Dr. Weir Mitchell's paper on nerve-injuries, besides two cyrtometric tracings in cases of empyema,

and twenty-three other woodcuts, illustrating the papers on excision of the knee-joint and sarcomata of the jaw and parotid gland. Although the volume issues from a College of Physicians, a large portion of it is filled with what we in England should call surgery. We state this as a matter of fact merely, and in no spirit of fault-finding, for its contents are of more than average value.

After the list of officers and fellows comes a memoir of Dr. George W. Norris, late vice-president of the college, and for at least a quarter of a century surgeon to the Pennsylvania Hospital. Descended from a resident of the Isle of Wight (who was one of the five Quakers who sent a letter to Cromwell, begging him to let them take the places of certain Friends who were imprisoned for conscience sake), and who afterwards settled in Jamaica, conscientiousness appears to have been a leading feature in Dr. Norris' character. His biographer tells us that 'he never operated or sought an operation for his own sake, or for that of the arena. He operated publicly, in the line of his duty, and always sought to make both the operation and the lesson good ones. He would give a brief account of the case beforehand, and reserve his comments until the operation was over. Rarely, until all was done, would there be a word, even of explanation. With him the Ego was at a discount, the patient was everything. Perhaps he carried this style to an extreme; if so, we have to say of it that in the old times it was an extreme on the side of humanity, and in these days of anæsthesia it is an extreme on the side of safety.'

A list of his published writings fills two pages. Many of them have been collected into one volume under the title of 'Contributions to Practical Surgery.' His paper on 'Fracture and Dislocation of the Astragalus, (*American Journal of the Medical Sciences*, vol. xx. 1837) and the essay upon 'The Occurrence of Non-Union after Fractures' are perhaps the best known in Europe of these works. It is said of him that 'Dr. Norris was a man of truth. He never flattered, and he never sneered. Well may we wish that not only we, but many more of his profession, were such as he was.'

This memoir is written by Dr. William Hunt, whilst Dr. Ingham contributes a memoir of Dr. John S. Parry, late President of the Obstetrical Society of Philadelphia, and Obstetrician to the Philadelphia Hospital. He was born in 1843, and, as he died on March 11 last, was only thirty-three years of age. Although so young, he had already distinguished himself, and is known by his 'Observations on Relapsing Fever as it occurred in Philadelphia in the Winter of 1869-70.' After this, three other papers attracted especial notice. The first was on the subject of rickets, which, the result of careful inquiries showed him, 'was scarcely less frequent in Philadelphia than it is in the large cities of Great Britain, and the Continent of Europe.' In the Philadelphia Hospital and in his dispensary practice he found that 'at least 28 per cent. of all the sick children between the ages of one month and five years who came under his observation were rachitic. Another important paper was one on 'Inherited Syphilis.' His next paper (in the spring of 1873) was on the 'Comparative Merits of Craniotomy and the Cæsarean Section in Pelves with a conjugate diameter of two and a-half inches,' in which he carefully arrived at the following conclusions.

'1. If gestation has advanced to the full term and the conjugate diameter of the superior strait be two and a-half inches, craniotomy affords the mother no better chance for recovery than the Cæsarean section; and if the diameter be two inches or less, exclusive of the soft parts, it is the duty of the accoucheur to perform gastro-hysterotomy rather than craniotomy.

'2. The recorded histories of cephalotripsy in such cases afford us no evidence that it will compete with the Cæsarean section in safety, while the French and German experience seems to show that cranioclasm is both more safe and more efficient.' This paper led Dr. Hugh L. Hodge to prepare his article on 'Compression of the Fœtal Head by the Forceps and Cephalotribe.' The preparation and printing of Dr. Parry's book on 'Extra-uterine Pregnancy,' and his valuable additions to the second edition of 'Leishman's Obstetrics' appear to have proved too much for Parry's strength, which had been undermined in 1874 by pulmonary hæmorrhage and pleuropneumonia. His biographer remarks that there are two lessons to be learned from Dr. Parry's life and death. 'The first shows how surely a man, possessing ability, honesty, and industry, even though a stranger, can become so prominent in his profession, that when he dies, not only is a profound grief felt by all his friends and acquaintances, but a deep sense of the great loss to the profession to which he belonged is realised by all his contemporaries and co-workers. The second is the absolute necessity of physical and mental rest, if the full measure of our lives is to be run out. Had Parry better comprehend this last, and acted on its teachings, he might yet have been spared to us.' His published writings also fill two pages of the Transactions with their titles.

Dr. Hutchinson's paper relates the history of a case of left-sided empyæma, in which, after the aspirator had been used repeatedly, a cure followed the introduction of one of Chassaignac's drainage-tubes. 'The operation was performed by entering a large needle, with an eye near the point, at the seventh interspace, and bringing out the point at the ninth interspace, a little posterior to the mid-axillary line. The needle was then threaded with the India-rubber tube and withdrawn in the reverse direction to that by which it had been passed into the chest, bringing out through the upper opening one end of the tube while the other end remained outside the lower opening. The two ends were loosely tied together, in order to prevent slipping, and the boy was sent to bed.' The cyrtometric tracings show that very little deformity had resulted.

Dr. Louis Starr records the case of a child, aged five, who passed twenty to thirty lumbricoid worms at the end of April, and in the middle of May had an oval tumour in the right hypochondrium, which proved to be a hepatic abscess. As there was distinct pointing, it was opened by the aspirator, which became plugged. A poultice was then applied, pus soon escaped freely, and by January 5 not only was the wound healed, but there was scarcely any traces of the cyst or sac of the abscess.

Dr. Cleeman's 'Report on the Meteorology and Epidemics of 1875;' Dr. John Ashhurst's paper 'On Excision of the Knee-joint,' with Dr. Packard's comments, and Dr. H. L. Hodge's 'Cases of Excision of the Knee in Adults,' and Dr. Weir Mitchell's article 'On Injuries of Nerves,' deserve special abstracts.

Dr. Cohe's paper 'On the Therapeutic Uses of Compressed and Rarefied Air,' Dr. Harrison Allen's

'Note on the Anatomy of the Perinæum;' Dr. Harlan's interesting paper 'On Hysterical Affections of the Eye;' a paper by Dr. Forbes 'On Gunshot Wounds of the Thoracic and Abdominal Cavities;' another by Dr. Morris 'On Calculous and Cystic Degeneration of both Kidneys;' and Dr. Ewing Mear's 'Cases of Sarcomatous Tumours' mentioned above; together with a short article and history of a case of 'Diabetes Insipidus treated by Ergot and Gallic Acid;' complete a volume which we have seldom seen equalled either in interest or importance by any similar compilation of the same size.

W. BATHURST WOODMAN.

On the Object and Aim of Psychiatry. An introductory Lecture by Dr. EDUARD HITZIG, Professor of Psychiatry in Zürich. 1876.

Dr. Hitzig contrasts the number of insane persons confined in asylums in the canton of Zürich with the number in England and Prussia. In Zürich the number of insane is as 1 to 252 of the population; in England and Prussia as 1 to 400 and 1 to 450 respectively. The author regards as the highest object of psychiatry the prevention of the origin of psychical diseases. As the most common cause of disease, the author points out heredity. Insanity must be regarded as a disease of the nervous system, which does not always produce the same form of disease, and may arise from other forms, so that epilepsy, deaf-mutism, and such diseases, may alternate in different generations. It is not to be believed that all the children of a person who at one time has suffered from insanity *must* be insane. Many may remain free, and may perhaps be characterised by uncommon endowments. The author points out the great importance of not overworking the brain in children whose parents have shown a tendency to insanity.

The effects of dipsomania upon the person himself and his posterity are then discussed. The children of drunkards inherit the same if not a greater tendency to disease of the nervous system than the children of nervous, or even of insane, parents; in fact, they die often at a younger age from convulsions and other epileptiform conditions. With the cure of acute *delirium tremens*, little good is obtained. If the patient is to obtain the necessary power to resist temptation, he must remain for several months after the end of the acute stage under strict supervision. The question of limiting the personal freedom in such cases is discussed and answered in the affirmative.

The causes of the persistence of insanity are then discussed. The appropriate use of asylums is regarded as of great importance. The chances of a cure become rapidly smaller with every week that the patient comes later into the asylum. According to Nasse, with a duration of the disease for one month before admission, 57.5 per cent. were cured; from seven to twelve months 9.1 per cent.; and for more than twelve months only 2 per cent. The author is strongly of opinion that an examination in psychiatry should be made compulsory upon the student.

WM. STIRLING, D.Sc., M.D.

A Directory for the Dissection of the Human Body. By JOHN CLELAND, M.D., F.R.S. London: Smith, Elder and Co. 1876.

The Professor of Anatomy and Physiology at Galway, well known for his original researches as

as well as for the share he took in the past editions of Quain's 'Anatomy,' has produced a small work which promises to be of much service to first year students. The book is similar in plan to the works of Bischoff and Mayer, but more modest in scope and also differs from them in being devoid of illustrations. But this omission is intentional. Dr. Cleland says in his preface, 'The following pages have not been written with the view of interfering with any works of anatomical demonstration or systematic anatomy already in existence, but are intended to supplement such books.' An apology for this little work was hardly needed; and even if Dr. Cleland had chosen to undertake the great labour of writing a much larger work, we fail to see how any one could call it an interference. We take it that when a writer brings out a new work he does so because he thinks he has something fresh to say, or has a different and what he deems a clearer way of putting the subject before the student or practitioner, and not merely with the view of interfering—commercially—with any previous work. The first chapter gives a concise description of the instruments needed and the method of using them, and the second occupies a brief space on the *order of dissection*. With Dr. Cleland's arrangement we quite agree, as long experience in dissecting-rooms has taught us that, immediately after the dissection of the perinæum, the body should be turned on its face and the dissection of the back and spinal cord at once proceeded with. These parts are much neglected by students, and unless they be made to do them at once, by the time—as in the ordinary way—they come to dissect the spinal cord they have the valid excuse that it is too decomposed. This method has the further advantage that it does not interfere with the dissectors of the head, neck, and limbs, who can be doing the posterior portion of their respective parts.

This book is intended to be read before the student begins the study of his part with the ordinary dissectors, and only pretends to deal *generally* with the dissection of the various regions, etc., and to give a rapid survey of the methods to be adopted and the points to be observed. No attempt is made to be very precise, as it is not the intention of the author to supplant other works. The remaining chapters deal with the lower limb, head and neck, thorax and abdomen and pelvis, and, as far as they go, contain excellent instructions.

The method of dissecting the internal ear is omitted, perhaps because the author addresses himself only to the beginner, for whom this would be too difficult a task.

We can conscientiously recommend the book to first-year men, and advise them to become thorough masters of its clear directions before attempting to work at their parts with larger books.

Lesions of Vessels in Fractures of the Leg. By DR. NEPVEU. Pp. 48. Paris: G. Masson. 1876.

A few observations made in M. Verneuil's wards led Dr. Nepveu to extend his researches into the literature on these lesions. He divides his subject into two parts; the first is general, on the lesions of vessels in fractures of the leg; the second is on the accidents which follow them. The general part includes an analysis of a collection of 53 cases, which he has arranged under the following heads: (1) vessels most frequently injured; (2) anatomical

conditions which favour the action of violence on the arteries; (3) the determining causes, such as direct fractures in 28, and indirect fractures in 7; (4) the intensity of the violence; (5) resistance on the part of vessels; (6) the mechanism of the lesion, which may be direct or indirect; (7) the nature of the lesion, a complete rupture, incomplete or lateral, longitudinal fissure, rupture of the two internal coats, punctured wound, single or multiple; (8) the signs and symptoms of rupture of an artery; (9) the diagnosis of an arterial wound; (10) the prognosis.

In the 53 cases, the anterior tibial was wounded in 23, the posterior tibial in 9, the peroneal in 3, and the nutrient artery in 2.

Veins are commonly injured, but Dr. Nepveu observes that authors fail to record any particulars about them.

The wounds in 22 cases were reported to have been in the lower third of the leg in 11, upper third in eight, and middle third in three cases. Most frequently the wound had been inflicted by direct action, as by section, laceration, or puncture. Sometimes it occurred by force acting at a distance, or by indirect action.

The following signs of a wound of an artery are mentioned—absence of pulsation, peripheral, or in the continuity of the vessel, diminution of temperature, loss of sensation, hæmorrhages, infiltrations, collections of blood, aneurisms, and gangrene.

In the second part he divides wounds of arteries in fractures of the leg into two chief classes: primary or immediate, and secondary or consecutive. In twenty instances of the first class he mentions 11 as presenting external hæmorrhages, 2 collections of blood, 1 infiltration, and 3 diffused aneurisms.

In thirty instances of the second class, 11 presented false aneurisms, 15 secondary hæmorrhage, and 3 gangrene.

Incisions into collections of blood are to be avoided for two reasons, the risk of hæmorrhage from the wounded vessel, and suppuration at the seat of fracture. Only when considerable bleeding ensues upon suppuration, is interference called for; then ligature should be applied locally or at a distance.

Slight infiltration should be treated by compression, by means of a many-tailed bandage, and the ligature, local or distal, is only to be resorted to when every other means has failed. The local ligature entails the conversion of the simple into a compound fracture, and the distal ligature is too dangerous. In 204 cases of ligature collected by Cocteau, 39 cases of gangrene occurred. He quotes a case of M. Verneuil's in favour of the treatment by compression.

In reviewing primary hæmorrhage he found the treatment varied greatly, but might be reduced to four kinds: (1) ligature of both ends of the vessel, which he represents as the preferable method; (2) plugging, with or without compression of the femoral trunk; (3) ligature of the femoral (not always practicable from atheroma or multiple lesions); (4) immediate amputation. This operation may be demanded by complications, but rarely by primary hæmorrhage only.

Secondary Hæmorrhage.—M. Nepveu has found fifteen cases of this accident. Of these, the earliest took place on the fifth day, and the latest on the seventy-fifth. These cases do not throw much light on the causes of the bleeding, for the anatomical examination has been too frequently incomplete. He con-

siders the treatment under two heads—first, the prophylactic; and, secondly, ligature of the femoral or amputation. If, in spite of having hermetically sealed the wound when small, extracted loose fragments, resected the pointed ends of the bones, ligatured both ends of the vessel, and assiduously employed antiseptic dressings—if, in spite of these precautions, secondary hæmorrhage take place, then ligature of the femoral is indicated; and if the general condition be serious, probably amputation is demanded.

Aneurisms.—He distinguishes two varieties—first, the diffused or false primary; secondly, the circumscribed or false secondary aneurisms; the latter being very rare, and both of these are to be distinguished from interstitial pulsatile hæmorrhages.

He has collected notices of fourteen cases of aneurisms, but they are wanting in full details of the anatomical structure of the tumours, and of their subsequent transformations. He examines the subject under the following heads—the vessels wounded, the etiology, the symptomatology, the progress, diagnosis, prognosis, and treatment.

The anterior tibial artery was injured six times, the posterior tibial twice, the peroneal once. It is uncertain which artery was wounded in the other cases.

He can only say of the causes that they are very various and complex. The primary aneurisms are the direct consequence of violence, and probably depend on the permanent gaping of the wound in the vessel; whilst the secondary, which appeared between the thirtieth and fortieth days, may have ensued upon the fretting of a spicule of bone against the walls of the artery, or upon ligature, or upon peri-arterial abscess, or, as the author suggests on the dilatation of a weak arterial cicatrix, when the support of the dressings has been suddenly taken away. About the date (between the 30th and 40th days) after the appearance of the aneurismal swellings, the dressings are commonly removed for the purpose of examining the state of union of the fracture. When the patient begins to walk too soon, does he not impose upon the feeble cicatrix of the vessel too great a tension?

The study of the symptomatology does not enable Dr. Nepveu to point to any pathognomonic sign. Whether they are primary or secondary in origin, their symptoms are alike when once the aneurisms are formed.

He quotes Cruveilhier to show that these lesions may occasionally undergo spontaneous cure.

The prognosis is not so grave now as it was at the beginning of the century. Treatment by compression has improved the prospect of a cure to a remarkable extent.

The treatment he divides into two kinds—the first involving bloodshed; the second being bloodless, namely, by compression, and the expectant treatment.

Of the four procedures—amputation, opening of the sac and plugging, ligature above and below the wound in the artery, and the distal ligature—the author advocates the last named, for completeness, precision, and relative safety. This operation was inaugurated by Dupuytren in 1809, and repeated by him later. It has its dangers and inconveniences, however; these consisting of the risk of gangrene of the limb, delayed union of the fracture, and the creation of a second wound.

The bloodless kind of treatment by compression, digital or mechanical, offers an incomparable sim-

plicity, and perfect innocuity. He refers to a successful case of M. Verneuil's. The man was cured in less than five weeks.

Gangrene.—From fractures of the femur, gangrene is less rare than from fractures of the leg, and this may be explained by there being but a single arterial trunk. Jourdan (*Thèse de Paris*, 1873), reported sixteen observations of laceration of the femoral artery in fractures, and ten resulted in gangrene. The disadvantages of the single trunk may be compensated by the numerous anastomoses of its branches. Gangrene of the leg after fractures ought to be more rare, for there are three large trunks to maintain the life of the limb.

Tight bandaging, compression of artery by bones or splinters, diseased vessels, and compression by extravasated blood, are mentioned as the causes of gangrene.

On the appearance of premonitory symptoms of gangrene, the cause should be ascertained, and displaced fragments at once reduced. Pulsation may not return immediately; therefore, before amputation, it would be wise to wait. If gangrene have taken place, amputation above the seat of injury is to be performed.

The Marriage of Near Kin. By ALFRED HENRY HUTH. London: Churchill.

Whatever may be thought of its conclusions, this is undoubtedly a remarkable book. Its purport may be gathered from the following words.

'We have seen in the preceding pages that not one of the many reasons which have been advanced why marriage between near kin should be prohibited by the state can stand inquiry. We have seen that there is no natural horror of incest, and that many peoples have practised, and habitually do practise it; while, on the other hand, we have seen that whatever may be the reason of certain prohibitions which exist, they are certainly not due to any conscious or unconscious experience of any evil results. We have seen that the statistics on which so much reliance has been placed, as a proof of the harmfulness of consanguineous marriage, are, when not absolutely false, miserably misleading and defective.'

In order to prove this assertion, Mr. Huth in the first place traces the history of prohibited degrees among ancient civilisations, and likewise among a vast number of observed savage tribes. He seeks to deduce from the latter that mankind have no 'natural horror' of any sort of incest; for, as he points out, the practice of imputing relationship through the male line only, or, as in the Polynesian tribes, through the female only, renders the marriage of half-sisters and half-brothers possible even in tribes which keep a strict rule of prohibited degrees. This, though noteworthy, cannot be said to be conclusive; for, as his own collection shows, a more or less strict prohibition of kindred marriage is much more common on the whole than the contrary usage, and the existence of such a law is inexplicable except on the theory that men felt some natural impropriety in obvious intermarriage. It is, of course, curious that in this matter, as in many others, the family should have organised itself in so many different ways. In some races, the social insignificance of women seems to have induced public opinion to forget and ignore consanguinity through females altogether; while in Polynesia, in ancient Lydia, and elsewhere, the precise opposite happened.

The feeling which led to the imagination of the law of degrees, Mr. Huth does not seem able to account for. He makes a rather hesitating attempt to deduce it from the well-known practice of marriage by conquest—that savage rough and ready custom, of which even our own marriage ring is perhaps a vestige; but in our opinion he entirely fails. His argument is, that exogamy became customary in many warlike tribes which practised female infanticide, and that it became popular usage because it involved not only a wide liberty of choice, but also an exciting occasion for the display of the young brave's prowess. Hence, Mr. Huth believes, there arose a feeling that it was cowardly and mean to marry at home, and from this finally sprung up the idea of the horror of incest! Surely this is not a credible explanation. It is very probably true that the law of exogamy, common in Asia, is a form of the savage marriage by conquest; but it is much more probable that both the one and the other arose from some prior objection to take a wife from the warrior's own family or sept, than that any such 'natural horror' arose out of them—for the supposed feeling is not against *tribal marriage* in general, but against those marriages within near degrees, *family marriages* in fact, which in a large number of cases are found to be prohibited even by endogamous tribes.

The writer then proceeds to collect all the reliable accounts of small communities which for any reason are obliged to intermarry. He takes first the remarkable case of the mutineers of the *Bounty*, who, from one man, five women, and nineteen children, in 1800, had grown to seventy-nine persons, all robust and healthy, in 1830. On the other hand we have the island of St. Kilda, which is gradually becoming depopulated through infant mortality; but Mr. Huth argues that the main cause of this is trismus nascentium, which prevails to a similar extent in Iceland and Faröe, and is of course not necessarily dependent on consanguinity of marriage. Some important cases of Scotch fishing villages are given on the authority of a memoir read by Dr. Mitchell to the London Anthropological Society, from which the general conclusion seems to be that idiocy, scrofula, etc., are somewhat more common among them than usual. It appears, however, in many of these instances, that though such isolated populations of civilised races must marry in and in, they avoid to a very remarkable extent the closer degrees of consanguinity. Thus in a Scotch village only 11 couples out of 119 were first cousins; while in a Berwickshire settlement of about 420 persons, careful inquiry discovered only 7 marriages of first cousins, and none of second cousins. This is a remarkable and important circumstance, for it at once helps to account for the apparent absence of the evils supposed to follow from consanguinity, and affords a strong indication of the repugnance felt even by isolated populations to family marriage.

We are not, therefore, disposed to allow that the writer has made out his case. Indeed, he hardly seems to believe it himself, for he refuses to follow out his theory to its logical consequence by advocating the marriage of nieces and aunts, or of brothers and sisters. He seems to argue, indeed, that there is no physiological reason against this, any more than there is among animals; but he shelters himself behind the assertion that in the former cases there would often be a disproportion of age, as also between parents and children, and that brothers and sisters might be likely to marry too young. These

arguments are very far from sufficient to account for the obvious antipathy with which such unions are regarded. As we have said, it is by no means proved that there are not physiological grounds for this; but even if it were, we think that most powerful reasons against it could be derived from the nature of the family as a moral whole. Every family has a most important function to perform as the educator of its young, until it sends them out to take their place in the state. For the fulfilment of this office, our present family relations are admirably adapted; but it would be certain to lead at once to chaotic confusion, if uncles made love to heiresses, or if the simple relation of brother to sister could be complicated by possibilities of marriage.

On Catheters for Leaving in the Bladder, and Whalebone Conductors. By Dr. A. AMUSSAT. Pp. 15. Paris. 1876.

This paper is written to recommend the whalebone bougies advocated and used by the author.

To meet the exigencies of practice in treating retention of urine, such as inexperienced medical attendants in cases requiring frequent catheterism, or the accident of a false passage, Dr. Amussat had adapted to each other a slender long whalebone guide or conductor, and a catheter open at each end. The former may be used, firstly, as a guide over which a catheter can be slipped into the bladder. Secondly, when the catheter is to be changed, the whalebone guide may be passed through the silver catheter just into the bladder, the catheter withdrawn and a gum catheter introduced in its stead, the whalebone being then extracted. Thirdly, by screwing the whalebone guide into the open end of the catheter, the number of instruments may be reduced and their introduction simplified. Fourthly, this guide may be substituted for the bougie-conductor commonly used with M. Maisonneuve's urethrotome, as that bougie is apt to double up in front of the stricture, or make an elbow close to the metal fitting. Fifthly, it is useful as a guide in passing the cannula of M. Vollemier's divulsor. Sixthly, to facilitate the introduction of the lithotrite in nervous patients, and those who present prostatic hypertrophy, the female blade of the lithotrite may be tunnelled for the whalebone guide. Seventhly, in a similar way, this instrument may be made of service in guiding into the bladder Heurteloup's catheter for washing out that organ.

The rod of whalebone is made from 60 to 70 centimètres in length, and of a thickness graduated from 8 to 12 tenths of millimètres. It terminates in a smooth olive-shaped bulb.

NEW INVENTIONS.

AERATED BREAD.

After fifteen years' experience, aerated bread has firmly established itself in public favour. Nor is this to be wondered at, when we consider the very unpleasant revelations contained in the reports of Dr. Guy, and others, on the bake-houses of the metropolis. Many of the disagreeables described in these reports were, however, obviated by Dr. Daughlish's process, in which a successful effort was made to obviate the waste of nutriment by pumping carbonic acid gas into the dough, and thus to make it light as when acted upon by fermentation. The

advantages of the process are: 1. Its cleanliness; instead of the dough being mixed with the naked arms or feet, the bread, from the wetting of the flour to the completion of the baking, is not, and scarcely can be, touched by anyone. 2. Its preventing the glycogenic deterioration of the flour, which takes place in the ordinary process, and thereby obviating the necessity of using alums. Chemical analysis also shows that the flour has undergone less deterioration in bread made by the aerated than in that made by the fermentative process. Time, however, has introduced improvements in the process which materially improve the flavour and the keeping properties of the bread. These improvements consist in what is technically called the 'wine-process,' and consist in forming a wine from malt by mashing, and afterwards setting up the vinous fermentation in closed vessels. Four gallons of the so-called wine are mixed with the necessary water for a sack of flour, drawn into a closed vessel, and aerated. It is then mixed with the flour (also in strong closed vessels), and kneaded by arms driven by machinery. The dough formed is drawn off by machinery (thus dispensing with the unpleasant intervention of the human hands or feet) into the required sizes, and at the same moment as the carbonic acid gas passes out of it, the dough is raised and vesiculated and ready for the oven; the whole time required for forming a sack of flour into loaves not being more than half an hour. The effect of the new wine process on the flour is, that the gluten-cells of the starch are softened and broken up, and the dough is thus entirely altered in its character. Instead of being tough and harsh, the dough becomes soft and elastic; it is easily kneaded, requiring only half the power to work the kneading arms, and the atmospheric pressure required in the vessels is only about 20 lbs. to the inch. The use of such low pressure, besides being a great pecuniary gain, is of considerable importance in giving to the bread a soft and beautiful pile-like texture. The dough, when prepared by the new wine process, also soaks and bakes with the greatest ease. The starch of the flour is now changed into dextrine, while the gluten is uninjured, and the bread has a sweet and agreeable flavour, free from that acidity and bitterness more or less present in ordinary bread. The bread known as 'whole meal,' in which the bran is retained, is also made by the same process. To medical men, who know the value of this constituent, it will be convenient to be able to order the form of aerated bread now under notice.

PATENT NIGHT LIGHT-LAMP OR FOOD-WARMER.

All medical men know the importance of careful nursing as an adjunct to their treatment, therefore no apology is needed for introducing to the notice of the profession an ingenious yet simple contrivance, patented by the same firm on whose glycerine soap we have also pronounced an opinion. The invention in question answers perfectly both for night light in the sick room and as a food warmer. It is, therefore, of unquestionable utility in those cases where beef-tea or other restoratives are required during the night, or for the feeding of infants. Messrs. Simpsons, Payne, and Co., to ensure the perfect working of this little apparatus, supply night-lights in which accuracy of time in burning and perfect combustion are guaranteed. They can also, which is an unusual

advantage in night-lights, be extinguished and re-lighted, and also carried about in case of sudden need. Those accustomed to the care of the sick, who know how much accuracy and handiness are needed in all the appliances for their use, will value these apparently unimportant, but practically useful points.

GLYCERINE SOAP.

Messrs. Simpsons, Payne and Co., of Millwall, have brought under our notice some samples of their Glycerine Soap. As a useful application for the rough furfuraceous and inelastic skin left after eczema and other skin affections, restoring suppleness to the skin, and allaying burning, tingling and smarting, glycerine is now universally recognised by the profession. For toilet use it is also very comforting to persons who suffer from chapped hands and face during cold weather, or the prevalence of the easterly winds peculiar to our climate. The glycerine soap manufactured by Messrs. Simpsons, Payne and Co., is specially adapted for the uses indicated, inasmuch as it contains as large an amount of pure glycerine as the exigencies of manufacture allow to be added to the soap proper. The amount of alkali absolutely necessary for the cleansing function of the soap is kept as low as possible, and no cocoanut-oil enters into its composition, so that the well-known emollient properties of the glycerine are not counteracted by these substances, which have the property of rendering the skin harsh and dry. For medical purposes Messrs. Simpsons, Payne and Co. manufacture a form of their soap without the admixture of perfume, an addition which might prove of doubtful advantage in cases of extreme irritability of the skin.

MONTSERRAT LIME-JUICE.

The properties which lime-juice possesses of keeping off scurvy, and maintaining a healthy condition of the blood, are now among the most striking and remarkable facts of medicine. A long series of facts amounting to absolutely irresistible proof have shown that lime-juice, used daily as an article of diet has the power of averting scorbutic affections with great certainty. Its effect is, of course, most markedly seen in sea-voyages, where it becomes an essential prophylactic. The bad quality of a good deal of lime-juice, and the various expedients employed to conceal it, have brought lime-juice occasionally into disrepute. But the sovereign powers of pure lime-juice have now been indisputably established; and the revelations of the recent failure of the Arctic sledge-parties from want of it emphasise our former oft-repeated proofs. It is, however, essential that the pure juice of the fine fruit should be used. We call attention to the lime-juice of the Montserrat Company, because a great deal of the lime-juice in the market is made from mixed fruit—unripe as well as over ripe; and from inferior fruit. Great care, as is well known, is taken by this company to reject all but the finest fruit; the rest being used by them for the manufacture of citric acid. In the Royal Navy the distinction is now well established in favour of lime-juice of this class, but in the merchant service less care is exercised; and until our merchant sailors are protected by the use of a perfectly reliable lime-juice, such as this of the Montserrat Company, scurvy will not be banished. As a daily drink in health, this juice may equally be recommended. Mixed with

syrops, or with aerated waters, it is highly palatable as well as extremely wholesome.

MADEIRA.

The long disappearance of Madeira from the list of wines which are within the range of medical prescription, was due to the prevalence of a disease which destroyed the vines of Madeira, and for a considerable time drove the Madeira proprietors from the market. For some years the vines have revived, and the produce of the vineyards of Madeira has once more resumed its old position in the wine-list. A great deal of excellent Madeira may now be had at relatively moderate prices. We have lately seen samples of Madeira taken from the dock stock and purchased of Messrs. Henry Watson and Co., of Clement's Lane, which are in every respect worthy of the old reputation of Madeira. Clean, sound, and wholesome wines, the true produce of a fine quality of grape, they have the bouquet which tempts the palate, while they are devoid of any adulteration. The taste for Madeira is undoubtedly likely to revive, and sound wines like these are well calculated to meet the demand.

A RESPIRATOR VEIL.

It must be admitted that the ordinary respirator is but a partial safeguard against the inhalation of injurious atmospheres, and it is also greatly objected to by ladies on account of its disfigurement. Equal objection is made to silk gauze or gossamer veils, or to Shetland veils, on account of obstruction of vision. Lastly, the so-called invisible respirator is very unsatisfactory in practice. Mr. Lennox Browne, the Senior Surgeon of the Central London Throat and Ear Hospital, has for some time recommended a veil which, simple as it is, appears to answer all purposes, and to meet all objections. It consists of an ordinary piece of blonde (that without spots is best for ophthalmic reasons) about twelve inches deep, over the lower four of which is sewn a double thickness of silk gossamer. By wearing this as a veil, mouth, nostrils, and ears are sufficiently and equally protected from cold, the external atmosphere being warmed in the chambers formed by the layers of gossamer. To prevent the veil from becoming unpleasantly damp by the moisture of the breath, that portion which comes over the nose and mouth may be stiffened with a layer of very thin wire-gauze, so as to stand away from the face; and it may be prevented from blowing up by a piece of elastic braid threaded through the lower hem. These veils are also useful as a protection against dust. They are quite easily manufactured at home. Messrs. Marshall and Snelgrove have long kept them in stock, and supply them at a very moderate price.

IMPROVED BEDSTEAD FOR THE SICK ROOM AND HOSPITAL.

We have seen an extremely ingenious and effective invention of Mr. Tinsley, which enables an invalid to be moved into the sitting or reclining posture without any effort or exertion, and without disturbing the bed-clothes. There is an inner frame to the bedstead which is hinged, and which is drawn upon by a ratchet wheel and handle at the bed-head. It is by far the simplest and most effective device we have seen, and that which most completely

answers the purpose of changing the position of the patient without disturbing him, and by the act of one person. It is, moreover, so simple that it may be fitted at very small cost, and bedsteads may be made on this principle at scarcely any additional cost. It is worth the attention of all hospital managers.

DIETZ'S NEW MULTITUBULAR STOVE.

Messrs. Dietz and Co. the well-known lamp and stove manufacturers, of Carter Lane have just patented a very ingenious and useful petroleum stove. It is composed of a series of block tin tubes which are filled with water. The water being heated by one of Messrs. Dietz's Paragon burners, a considerable amount of moist heat is radiated into the apartment to be warmed. We have formed a very favourable opinion of Messrs. Dietz's new stove from practical experiment, and can pronounce it to be a cleanly, safe, economical and excellent apparatus for warming rooms without a flue, green-houses, or in fact, for any purpose of the kind where a stove is required.

RECENT FRENCH BOOKS.

Published by G. Masson.

Traité pratique des maladies des ovaires et de leur traitement, précédé d'une étude anatomique et physiologique de ces organes, de l'ovariotomie, par le docteur A.-A. Boinet. Deuxième édition entièrement revue et augmentée. 1 vol. in-8 de 696 pages. Prix : 9 fr.

Quelques remarques sur les calculs vésicaux et la manière de les opérer à la clinique chirurgicale de Kazan, par le docteur Beketow, professeur à l'Université de Kazan. In-8, avec figures dans le texte et une planche en couleur. Prix : 5 fr.

Traité du diabète, diabète sucré, diabète insipide, par le docteur Lecoorché, professeur agrégé à la Faculté de médecine. 1 vol. in-8 de 703 pages. Prix : 10 fr.

Traité de la diphthérie, par A. Sanné, docteur en médecine. 1 vol. in-8 de 634 pages, avec 4 planches. Prix : 10 fr.

Published by Germer-Baillière and Co.

Manuel de pathologie et de clinique chirurgicale, par MM. A. Jarmin, chirurgien des hôpitaux, et F. Terrier, professeur agrégé de la Faculté de Paris, chirurgien des hôpitaux. Troisième édition. Tome I, 1 fort vol. gr. in-18. Prix : 8 fr.

Manuel d'histologie pathologique, par MM. V. Cornil, professeur agrégé à la Faculté de médecine de Paris, médecin des hôpitaux, et L. Ranvier, professeur au Collège de France. Troisième et dernière partie, 1 fort vol. grand in-18, avec 133 figures intercalées dans le texte. Prix : 7 fr. L'ouvrage complet, en 2 volumes. Prix : 16 fr.

Published by J.-B. Baillière & Sons.

Études historiques, physiologiques et cliniques sur la transfusion du sang, par le docteur Oré, professeur à l'École de médecine de Bordeaux, lauréat de l'Institut. Paris, 1876. Deuxième édition, in-8 de 704 pages, avec planches et figures. Prix : 13 fr.

Contributions à l'étude des présentations de la face, par Adolphe Carpentier, docteur en médecine. Paris, 1876. In-8 de 74 pages, avec tableaux statistiques de 330 présentations de la face, observées à la Maternité de Paris. Prix : 2 fr.

MISCELLANY.

THE celebrated naturalist, Von Baer, whose name is closely connected with the study of embryology, died on November 28, at Dorpat, at the age of eighty-five.

THE College of Physicians and Surgeons of New York has discontinued all faculty prizes. Instead, they offer three prizes for general proficiency in examination.

THE Goldsmiths' Company have presented 1,000*l.* to the Chemical Society as a contribution to the fund being raised by that society for the promotion of chemical research.

A SCIENTIFIC NONAGERIAN.—M. Chevreul was recently entertained at dinner at the Café Corazza, in the Palais Royal, by eighty *savants*, in celebration of the fiftieth anniversary of his professorship and membership of the Academy of Sciences. M. Chevreul, now the oldest member of the Academy of Sciences, is ninety years old, and enjoys perfect health and mental vigour.

ROYAL MEDICAL SOCIETY OF EDINBURGH.—The following have been elected office-bearers for the ensuing year. *Presidents* : J. Graham Brown, M.B., C.M. ; Joshua J. Cox, M.B., L.R.C.P. and S. Ed. ; R. Kirk, M.B., C.M., L.R.C.P. and S. Ed. ; James Baker, M.B., C.M., L.R.C.S. Ed. *Honorary Secretaries* : J. Milne Chapman ; Robert Roxburgh, M.B., L.R.C.S. Ed. *Library Curator* : Lionel Druitt, M.R.C.S. Eng. *Museum Curator* : Chas. W. Cathcart, M.A.

At the last meeting of the Dresden Society for Incineration, 'Urne,' it was announced that at the Brussels Exhibition of Hygienic and Life-Saving Apparatus, the gold medal was awarded to the Siemens system. It was also announced that for the erection of an incinerating furnace in Saxe-Gotha, preparations for which have already been made, considerable contributions have been received. The agitation on behalf of incineration, it was stated, is making slow but steady progress in other countries.

THE VOICES OF ANIMALS.—Professor Landois of Freiburg has lately published an interesting work on the 'Voices of Animals,' which affords additional evidence of the universality of vocal sounds among the lower forms of animals, including the Mollusca. The author considers it as beyond all question that ants possess a vocal speech, inappreciable by human ears, by which they are enabled to exercise those higher mental faculties to which they owe the development of the advanced social organisation which they exhibit in their communities. Professor Landois' work is illustrated by numerous microscopical and other drawings of his own, and forms an interesting addition to our natural history literature.

THE PHYSIOLOGICAL EFFECTS OF CONDENSED AIR.—M. Bert, has for a long time been conducting a series of experiments with a view of determining what are the physiological effects of condensed air on the human system. Many engineering works of the day involve the necessity of workmen carrying on their operations under various pressures of air, to say nothing of the fact that the rise and fall of the barometer involve us all in changes differing only in degree from that which the diver experiences when he descends from the surface of the water to a depth of fifteen or twenty fathoms beneath it. M. Bert thinks that the influences of ordinary changes of air as indicated by the barometer are due exclusively to the varying quantities of oxygen contained in the air inhaled. The pressure of oxygen and the consequent amount of it which finds its way into the blood, he shows, depends upon the centesimal proportion of it in the air, and upon the barometrical pressure, and he says that the mischief which operatives in air-tight dresses so often experience from the density of the air they are compelled to breathe, might be completely obviated if an atmosphere were composed of air and nitrogen nicely adjusted in proportion to the pressure under which the mixture was passed along the tubes. Although it has been stated on good authority that a man may follow avocations involving the breathing of condensed air in certain cases, not only without injury, but even with advantage, there are also many cases in which injury is believed to result, and M. Bert's experiments may prove to be of great benefit to them.

QUEEN'S COLLEGES IN IRELAND.—At the conferring of degrees on Queen's University students in Dublin Castle, the Duke of Leinster, as Chancellor, acknowledged that the Government had sought to increase the efficiency of the colleges by increasing the grant to 1,600*l.* per annum for scientific appliances, and by allowing class fees to be taken into account in estimating the superannuation allowance of the professors.

THE PHYLOXERA.—The French Consul at Canton has drawn attention to a tree, the oil of which, he thinks, might be used as a preventive against the ravages of the phylloxera. The tree is the *Élaecocca Vernicia*, and the oil it yields is universally used in China for protecting the wood of houses, ships, furniture, etc., from the pernicious effects of moisture, and the ravages of insects. It renders any texture impenetrable, is a powerful sicative, and enters largely into the composition of the celebrated Japanese varnish.

THE CAP AND GOWN.—Forty lady medical students in all are, it is stated, pursuing their studies in the schools of the Faculty, and in the hospitals of Paris, of whom fourteen are English. Of the rest the majority are Russian, and the remaining number are American, German, and French ladies. Several ladies have already graduated M.D. of the University of Paris, including Mrs. Garrett Anderson, Mrs. Putnam Jacobi, Madame Brès, and Madame Ribaud; the last three all graduated with great distinction, their theses being honourably noted by the Faculty. Three lady graduates of the University of Zurich are now practising in England; Mrs. Hoggan, M.D. and Mrs. Atkins, M.D., in London, and Mrs. Walker-Dunbar, M.D., in Bristol.

DISEASES GERMINATED IN HOSPITALS.—Some interesting facts tending to confirm previous observations by others have recently been communicated to the Société de Biologie, by M. Nepveu, of the Laboratory of La Pitié. A square metre of the wall of a surgery-ward having been washed after two years, the liquid pressed from the sponge was examined immediately. It was somewhat dark throughout and contained micrococcus in very great quantity (fifty to sixty in the field of the microscope), some micro-bacteria, a small number of epithelial cells, a few globules of pus, some red blood-corpuscles, and lastly a few irregular dark masses and ovoid bodies of unknown nature. The experiment was made with all necessary precautions; the sponge employed was new, and carefully washed in water that was newly distilled.

PORTUGUESE OYSTERS.—Attention was lately called in the French Academy to the properties of the oysters called Portuguese, brought from the mouth of the Tagus. They are very much richer in bromine and iodine than those met with on the English coasts, and are a valuable article of food, well deserving the attention of hygienists, and specially suitable for preventing scrofula, ganglionic swellings, rickets, and perhaps also consumption. One kilogramme of Portuguese oysters extracted from the shell gives 700 grammes of water—a slightly violet colouring matter from the liver, 0.039 of iodine and 0.052 of bromine. The oysters cannot be cultivated further north than the warm waters of Portugal or the south of France. Near Lisbon they occupy a large bank of about 50 kilometres. They are distinguished in appearance partly by their claw-shaped shell.

ST. JOHN'S COLLEGE, Cambridge, offers for competition an exhibition of 50*l.* per annum, for proficiency in Natural Science. The examination will commence on Saturday, April 7, and will be in Chemistry, including practical work in the laboratory; Physics, viz., Electricity, Heat, and Light; and in Physiology. Candidates will also have the option of being examined in Geology, Comparative Anatomy, and Botany, provided they give notice of the subjects in which they desire to be examined four weeks prior to the examination. No candidate will be examined

in more than three of these six subjects, whereof one at least must be chosen from the former group. It is the wish of the master and seniors that excellence in some one department should be specially regarded by the candidates. Names should be sent to one of the tutors at least fourteen days before the examination,

The course of lectures at the École Libre of Anthropology, established by the Faculty of Medicine of Paris in one of their buildings, was commenced on November 15. The scheme we announced last year is an accomplished fact. The lectures will be open to the public free of charge. M. Paul Broca will deliver lectures on anatomic anthropology; M. Paul Topinard, in biological anthropology, will lecture on the history of anthropology, the general, physical, and physiological characteristics of man, and on anthropometry; M. Eugène Dally, in ethnology, will lecture on the origin and filiation of human races. M. Gabriel de Mortillet, Sub-Director of St. Germain Museum, on pre-historic anthropology; and M. Hovelacque on linguistic anthropology. The lectures will be supplemented by demonstrations in the museums and excursions to pre-historic stations round Paris.

UNIVERSITY OF CAMBRIDGE.—The following are the College Lectures in the Natural Sciences given at Cambridge during Michaelmas term, 1876:—Gonville and Caius College—On the Physiology of Digestion and Absorption, by Dr. Bradbury; On Volumetric Analysis, by Mr. Apjohn. Christ's College—On Vegetable Physiology and Histology, by Mr. Vines. St. John's College—On the Principles of Qualitative Analysis, by Mr. Main; Instruction in Practical Chemistry will also be given. Trinity College—On Electricity, by Mr. Trotter; an Elementary Course of Practical Morphology, by Mr. Balfour; Practical Physiology and Histology, by the Trinity Prælector in Physiology (Dr. Michael Foster), at the New Museums. Sidney Sussex College—Elementary Course of Vegetable Morphology, by Mr. Hicks. Downing College—On Chemistry, by Mr. Lewis; On Comparative Anatomy and Physiology, by Mr. Saunders.

THE SCIENTIFIC INSTRUMENTS AT SOUTH KENSINGTON.—The provisional managers of the guarantee fund for purchasing scientific apparatus now exhibiting at South Kensington have received from the Duke of Devonshire an intimation of his willingness to subscribe 5,000*l.* to the fund on condition that four other persons will do the same. There are in addition already five promises of 1,000*l.* each from Mr. W. Spottiswoode, Mr. Warren de la Rue, Sir John Lubbock, Bart., M.P., Messrs. Siemens Brothers, and Sir Joseph Whitworth, Bart. There are also many promises of 500*l.*, 250*l.*, 150*l.*, etc. The object of the fund is to secure by purchase those instruments now at South Kensington, 'which it may be to the advantage of science to exhibit permanently, but which, failing such purchase, would be returned to the exhibitors.' No decision on the part of the Government has yet been made known as to what will be done regarding the establishment of a permanent museum. Her Majesty's Commissioners for the Exhibition of 1851 have agreed to erect a museum at a cost not exceeding 100,000*l.*, and to place it at the disposal of Her Majesty's Government.

COMPARATIVE PHOTOGRAPHS OF BLOOD.—The *American Naturalist* for May states that Dr. J. G. Richardson, for the sake of illustrating in criminal cases the distinguishable appearances of different kinds of blood, has caused drops of blood from different animals to flow so nearly in contact on the glass slide that portions of the two drops appear in the same field, and can be photographed together. Dr. C. Leo Mees has modified this method, and obtained exquisite results in specimens presented to the microscopical section of the Tyndall Association. He spreads the blood by Dr. Christopher Johnston's method, which is to touch a drop of blood to the accurately ground edge of a slide, and then draw it gently across the face of another slide, leaving a beautifully spread film. In this way one kind of

blood is spread upon the slide and another on the cover. When dry, one-half of each is carefully scraped off with a smoothly sharpened knife, and the cover inverted up on the slide in such position as to bring the remaining portions of the film into apposition. Under the microscope and in the photograph the two kinds of blood appear in remarkably fine contrast, even those bloods that are too nearly alike for safe discrimination in criminal cases being easily distinguished when thus prepared from fresh material.

MEDICAL ASSOCIATIONS IN SWEDEN.—There are five distinct medical organisations in Sweden, which are in active and prosperous condition. The most important of these is the Medical Society of Stockholm, which meets once a week, has a large and influential membership, among which may be counted the faculty of the Carolina Medico-Chirurgical Institute. Professor E. Odmansson is the president. This association publishes not only its transactions, but also *The Hygeia*. The Medical Society of Upsala, with Professor P. Hedenius as president, consists chiefly of the members of the faculty of the university of that place. This association, which is quite an active one, publishes its transactions in bi-monthly parts. The Military Medical and Surgical Society, whose headquarters are at Stockholm, was formed last year, and has Dr. Edholm as president. It has commenced publishing a journal of military surgery, which is largely made up of the transactions of the association. The Medical Association of Gothenburg has a good and influential membership, but publishes neither journal nor transactions. The President is Dr. E. Salén, of Gothenburg. The Royal College of Health, at Stockholm, is considered to be the highest medical authority of Sweden, and has the entire medical faculty of the country under its control.

GLOBULAR THUNDERBOLTS.—In a paper addressed to the Academy of Sciences, M. G. Planté endeavours to cast some light on this phenomenon by referring to the violent thunderstorm that broke over Paris some time ago, between half-past three and four o'clock P.M., where lightning, under a globular form, struck No. 28 of the Rue des Tournelles, and a corner of the Théâtre Beaumarchais. On that occasion there was no high wind, and part of the storm cloud kept hanging for several minutes over the quarter of the Bastille; the discharges were unceasing, and several claps of thunder following upon lightning in all but continuous flashes, announced that various places of the neighbourhood had been struck. From M. Planté's inquiries it appears that the lightning fell three times on the same spot; the theatre, and the court-yard and garden of No. 28, Rue des Tournelles, the house commonly known in the quarter as the Hôtel de Ninon de l'Enclos. The stage manager of the Théâtre Beaumarchais, who happened to be in the wardrobe, a small pavilion at the top of the edifice, saw a 'bomb of fire' as big as a man's fist fall. In the Rue des Tournelles, a workman, living on the fourth storey, saw a 'globe of fire' of the size of a cannon-ball graze, in falling into the court, the edge of the roof, close to a flower-pot; the plant growing in it lost a twig on the occasion, and not more. At the same moment, another workman, on the ground floor, remarked 'three small balls of fire' on the pavement of the court, which was at that moment quite under water from the rain that was falling. Lastly, a bronze manufacturer saw 'two or three fiery lumps without any definite shape' fall into his garden, which was thoroughly swamped. M. Planté finds that his previous views have thus been confirmed. Electrified globes were formed as in those experiments in which a thread of water traversed by a powerful electric current and internally furrowed by fiery streaks reproduces the effects of a waterspout by occasioning luminous globules to be formed at the surface of a liquid into which the negative pole dips.

DEATH OF DR. T. S. WRIGHT.—We record with regret the death of a modest but devoted student of science, Dr. Thomas Strethill Wright, of Edinburgh, at the age of fifty-eight. Dr. Wright was a practising physician in

Edinburgh, but found time to make many researches, and probably a few discoveries, in various departments of science, both in biology and physics. From a memoir in the *Scotsman*, we learn that after settling in Edinburgh in 1853, he undertook a series of observations on British zoophytes, more especially those inhabiting the Firth of Forth, and not only discovered many important facts in their structure, but added to the British fauna several new and interesting forms. His memoirs on these animals, eighteen in number, were published in the *Annals of Natural History*, the *Edinburgh Philosophical Journal*, and the *Proceedings of the Royal Physical Society of Edinburgh*, and speedily attracted the attention of scientific workers in the same field both at home and abroad. He entered into a correspondence with Agassiz, Van Beneden, Claparède, Kölliker, and Allman, who in their writings repeatedly refer to the value of his observations and discoveries. But he did not confine himself to natural history studies. He was constantly at work with physical apparatus, and invented various singular forms of telephones, etc. Some of the most curious of his experiments on what are called Electric Cohesion Figures are described by himself in *Chambers's Encyclopædia*. But it is much to be feared that a great many of his most ingenious inventions and discoveries are entirely lost, as his modesty prevented him from bringing them before the Royal Society of Edinburgh, though he was frequently urged to do so. One of these was a mode of studying the scintillation of stars, by observing them through a telescope of low power supported on a vibrating stand. In 1865 Dr. Wright was made a member of the Zoologico-Botanical Society of Vienna. His ingenuity and readiness showed themselves in the mode in which he constructed out of simple materials a piece of apparatus, or devised a new method of observation, or executed the beautiful drawings with which his natural history papers are illustrated.

LADY BELL.—Lady Bell, widow of the late Sir Charles Bell, the physiologist, died last month at the advanced age of nearly ninety. Lady Bell was the second daughter of Mr. Charles Shaw, of Ayr, and was married to Sir Charles, then Mr. Bell, in 1811. When she was married to Mr. Bell, he was struggling into fame as a lecturer on anatomy and surgery in London, and she contributed not a little to lighten the burdens incidental to a successful professional career by acting as his amanuensis for some of his early popular writings, and by making the enthusiastic physiologist's home bright and happy by her buoyant disposition and agreeable manners. His *Animal Mechanics*, his *Anatomy of Expression*, and the Bridgewater Treatise on *The Hand* went to the press mainly in her handwriting. After a residence of five-and-twenty years in London, Sir Charles was appointed Professor of Surgery in the University of Edinburgh. In Edinburgh Lady Bell was famous for her elegant home and happy *réunions*. On the death of her husband in 1842 she returned to London, where she had made many friends in the scientific world during her former residence. Her married life had brought her into community with all the scientific men of the day, and this society of the learned she cultivated during the thirty-four years of her widowhood. A great reader, a woman of keen perception, with a mind capable of entering into the controversies and topics of the day, she was able to count among the friends of her widowhood many known to fame in literature, in science, and in art. These friends reciprocated her friendship not only out of respect to the memory of her husband, but out of regard for herself; for, keeping pace as she did with the age, she was always able to discourse on the last novelty with each in his own peculiar province. Lady Bell was endowed with great conversational powers. She had a ready flow of thought, and clothed her ideas in ornate and precise language. Up to the date of her last illness, though within a few months of her ninetieth birthday, she read the *Times* daily, and nearly all the new books in science and light literature, and she often put her juniors to shame by acquaintance with new matter of which they had not heard.

Her mental work was not confined to the perusal of the writings of others; she republished several of her husband's works, carried on an animated correspondence with a large circle of friends, wrote verses occasionally, and at the age of eighty-seven, edited her husband's treatise on *The Hand*.

PROFESSOR HUXLEY ON THE EVOLUTION THEORY.—A lecture was given at the opening of the session of the London Institution, on Dec. 4, by Professor Huxley, on 'Some Recent Additions to our Knowledge of the Pedigree of the Horse.' Mr. Huxley began with a comparison of the skeletons of the horse and polar bear, pointing out the similarity in the regions of the skull, the correspondence of the number of joints in the neck (irrespective of the length of the joints), the number of joints in the vertebræ and tail, and the points of agreement and those of divergence in the teeth. Dwelling chiefly on the marked differences in the bones of the legs of the two animals, and still more particularly on the distinction between the foot of the bear and that of the horse, he illustrated the gradual changes which fitted the horse for running over fields and roads, and left the bear suited for climbing and making his way over ice. Laying down the general proposition that it belonged to the general plan of mammalia to have five toes on each foot, these became reduced to four in the pig, three in the rhinoceros and tapir, two in the cow, and one in the horse, sheathed and protected similarly to the claws of the bear. The facts of a common ground plan in the horse and the bear were just as true as that an architect had a common ground plan for various structures. Paleontology furnished traces of such a transition as must have taken place in the horse if the doctrine of evolution were true. Remains of the horse in the later tertiary period were like those of the existing horse. In the remains of the upper miocene, there was a little difference in the teeth, and an extra small toe like a dew-claw. The horse of that period, ancestor of the present horse, was called 'hipparion.' Working back into the older miocene, there had been discovered in France, Germany, and the United States remains of an animal first described by Cuvier under the name of the paleotherium, a creature differing from the hipparion as much as the hipparion differed from the horse. Instead of a mere dew-claw the animal had three toes, the fibula was complete throughout, and the ulna was a distinct bone. From this Mr. Huxley passed to the great area eastward of the Rocky Mountains, where a large inland basin received in the mud of the older tertiary period the remains of animals which flocked about its shores. In these miocene rocks Professor Marsh found within the last six years remains of the antehippus, and in the oldest miocene the mezzo-hippus, in which he found the rudiment of a fourth toe. Then in the eocene was found a creature, not much larger than a fox, but having equine peculiarities, with four complete toes. So far, as thus shown, the history of the horse was exactly in accordance with the doctrine of evolution. In the lacustrine deposits, which preceded the eocene, it was certain that there would be found equine remains with five toes on each foot, and then the history of the horse would be as complete as any such history could be. The reason was such to his mind that he did not care to discuss longer the theory of evolution. What was true of the horse was true of other animals, because it would be preposterous to suppose that nature had not built others on the same plan, and carried out the same fundamental idea.

PROFESSIONAL APHORISMS.—The following collection of aphorisms was made for the *Richmond Medical and Surgical Journal*, by Dr. M. Schuppert, of New Orleans, and is published in the July number. Necroscopical investigations (autopsies) are often the grave of the finest theories, and against the logic of these facts, unfortunately, there is no appeal.—Experience only becomes useful when guided by reflection.—To individualise is the fundamental principle in medical practice.—'Qui bene distinguit bene medebitur.'—'Medicus minister, non magister naturæ.'

Anytime in which an operation is well done is quick enough.—To observe little things best characterises the great physician.—Try to learn, see with your own eyes, and avoid as much as possible to look through coloured glasses.—Never do anything in your profession without a good reason, which, whatever the result may be, will leave your conscience clear.—Keep your office, and the office will keep you.—Take great care of your first patients, ye beginners! for they are the seed from which your practice is to spring.—'La médecine est le plus noble des professions et le plus triste des métiers.'—A judicious silence is always better than the truth spoken without charity. Be cautious to tell all you actually know or have seen, even in telling the truth and nothing but the truth; nothing under any circumstances is more dangerous, and will bring you so certainly in disgrace. Truth is a dish not made for every man's stomach, and nothing ought to be handled with more care.—Medical can not be separated from moral science without reciprocal and essential mutilation.—There is no truth, however pure and however sacred, upon which falsehood cannot fasten and engrave itself.—Man is a despicable animal. There is scarcely any one who may not, like a trout, be taken by tickling. Quacks know this and act upon that knowledge.—When the blind credulity of the public in medical matters is considered, one does not wonder that there are so many quacks and impostors; but, on the contrary, that there are so many upright physicians.—The practitioner who expects his reward from the gratitude of his patients, may be likened to the countryman who waited, in order to cross the river, until the waters had done flowing.—When you want to get rid of a troublesome patient, you have but to send in your bill. We are angels when we come to cure, devils when we ask payment.—If the reward of investigation be taken away, study will be neglected.—The cheapest doctors are also the most ignorant. Cheap doctors and cheap medicines are always in close proximity to a well-filled graveyard.

THE DISEASES OF CHILE.—One of the maladies that invades this land in an almost fatal manner is the epidemic small-pox. Within these few years alone there have occurred two epidemics of the same malady, which traversed the country from north to south. The last time, above all, it became very confluent and hæmorrhagic, from which the mortality attained sometimes to 50 per cent. during a short period. It is to be observed that such ravages occur almost exclusively among the more indigent classes, originating in the absence of wholesome habits, and more especially in the non-vaccinated individuals. With us, vaccination is not compulsory. In the interval between one epidemic and the other, there are always to be seen some cases of mild variola in our cities.—Another endemic affection, becoming epidemic from time to time, is the *chabalengo*, improperly termed the typhoid fever of Chile, which corresponds exactly to the typhus fever of Ireland, as described by Graves and Stokes of Dublin. In general, this is a formidable malady in itself, and much more so when epidemic. This affection predominates in the necessitous and vicious classes in the epidemic epoch. When non-epidemic, it attacks the natives of the country periodically, but under a benign form in the generality of the cases. During the year 1873, we had an epidemic of *erysipelas faciei*, which made a great number of victims in Santiago, from taking the hæmorrhagic or gangrenous form. In 1868 and 1869 there was an epidemic of puerperal metropéritonitis, reduced to a small number of cases in civil practice. The gravity of this malady depended, in general, on the state of anæmia in which the inflammatory affection found the patients. Whooping-cough prevailed during the whole of 1873 among the children. Measles and scarlatina usually present mild epidemics during the spring season. We have had the aphthous fever, or epizootia, among the animals, imported during the year of 1871 from the neighbouring Argentine Republic by the herds imported from it to ours. Under the influence of various pathogenic causes, the following affections are endemic: The tonsillary anginas and the milder pharyngeal;

bronchitis and pneumonia; dysentery—the cholera mistero (*lapidis de calambres*); acute rheumatism; and the neuralgias. The above-mentioned recognise as the primary productive agents abrupt atmospheric changes, excesses of all kinds, which predispose by debilitating the organism, and the misery and neglect of the inferior ranks. Rheumatism and syphilis are the most frequent originating causes of organic heart disease in this country. The former is very untractable. Syphilis is sometimes so from want of appropriate treatment. In consequence of bad hygienic regimen, affections of the liver (hepatic abscess) are common. Dyspepsia and diarrhoea are also so in all ages, from similar causes; likewise the *lumbri* in children. Pustula maligna appears from time to time in country places under local pathological conditions (contact with the flesh of putrefied animals). The two forms of pulmonary phthisis (*P. caseosa* and *P. gravelosa*) are frequent and fatal, especially in the localities where the supply of the reparatory aliments is difficult. In exchange, till now, we have never had epidemic cholera among us, nor yellow fever, which on repeated occasions have decimated our neighbours in Peru and La Plata. No intermittent fevers exist in our natal soil, and the rarity is extreme that one or other case of dothienteria becomes visible.—Dr. John Boyd, in *Edinburgh Medical Journal* for August.

DR. CARPENTER ON SPIRITUALISM.—On the evening of December 7, Dr. W. B. Carpenter delivered at the London Institution a lecture on 'Mesmerism, Odyism, Table-turning, and Spiritualism, considered historically and scientifically.' He said that from the earliest period down to the latest, there was an obvious continuity in the type of the manifestations which had been produced, and he thought that this might be traced to the fact that the mental tendencies were the same in all grades of humanity, though varying in aspect, according to the general habits of thought and the amount of civilisation. Throughout there was a most remarkable similarity in the phenomenon themselves, and in the mental tendencies to which belief in them was owing. To criticise such notions it is necessary to have studied the extraordinary dispositions to self-deception and intentional deception which are admitted even by the candid advocates of spiritualist views. It is necessary to be acquainted with the modes in which exposures have been effected. The only prepossession which scientific men can allow to operate is one in favour of the observance of the laws of nature. When a table is said to rise of itself and float about beneath the ceiling, we are justified in requiring a degree of proof of such a fact which we should not require if a more ordinary occurrence were alleged. Men of science hold themselves open to the proof of any new force in nature if only it is given in the satisfactory way in which the proof of galvanism, magnetism, or electricity was made. No one can go into this kind of investigation with any likelihood of arriving at true results who is not prepared with the kind of special knowledge required for it. The instruments of which knowledge is required in this investigation are those very delicate instruments the human body and the human mind, things of peculiar susceptibility, of susceptibilities not constant. Medical knowledge in particular affords important guidance. Dr. Carpenter alluded then to the 'Ody' force of Baron von Reichenbach, to the alleged appearance of flames from a magnet, and to the pretensions of Mesmer. He also gave the history of divination by the oscillations of a ring or bell suspended, and referred to the phenomena connected with the 'divining-rod.' In a subsequent lecture he would speak of clairvoyance, which was the link, as it were, between mesmerism and spiritualism. So far from scientific men not having investigated these things, they had been investigated over and over again. There was still a lurking belief in the minds of a number of persons that there must be something in the pretensions which were thus put forward, but the only 'something' which existed was the extraordinary readiness with which men and women possessing a love of the marvellous—as if there was not sufficient

in science which was marvellous enough—embraced the abnormal manifestations of diseased minds.

UNIVERSITY OF LONDON.—The following is a list of the candidates who have passed the recent second M.B. examination:—*First Division*.—Samuel Herbert Burton, University College; Edward Joshua Edwardes, St. Mary's Hospital; John Christian Ferrier, Guy's Hospital; Thomas Colcott Fox, University College; John Gatchell Hancock, King's College, Charles Edward Harrison, St. Bartholomew's Hospital; John Benjamin Hellier, Leeds and University College; Joseph William Hunt, University College; Arthur Henry Jones, Guy's Hospital; Walter Aubrey Kidd, Guy's Hospital; William Henry Lamb, Guy's Hospital; Augustus Joseph Pepper, University College; Thomas Mark Pinnell, University College. *Second Division*.—Henry Blake, St. George's Hospital; Hugh Walter Boddy, Royal School of Medicine, Manchester; Harry Beecham Briggs, King's College; Herbert Duke, Guy's Hospital; John Geoffrey Langley, University College; Thomas Sharp Parry, University College; Rhinalt Navalw ap Joan Pughe, Liverpool Royal Infirmary; Thomas King Rogers, University College; George Frederick Rossiter, St. Thomas's Hospital; William Joseph Seward, University College.—Examination for honours. *Medicine: First Class*.—Augustus J. Pepper (Scholarship and Gold Medal), University College; J. William Hunt (Gold Medal), University College; Thomas M. Pinnell, University College; John B. Hellier, Leeds, and University College; John C. Ferrier, Guy's Hospital. *Second Class*.—Thomas K. Rogers, University College; Samuel H. Burton, University College; Arthur H. Jones, Guy's Hospital; Walter A. Kidd, Guy's Hospital; Thomas S. Parry, University College. *Obstetric Medicine: First Class*.—J. B. Hellier (Scholarship and Gold Medal), Leeds, and University College; A. J. Pepper (Gold Medal), University College; J. C. Ferrier, Guy's Hospital; Rhinalt Navalw ap Joan Pughe, Liverpool Royal Infirmary; A. H. Jones, Guy's Hospital. *Second Class*.—S. H. Burton, University College; George Frederick Rossiter, St. Thomas's Hospital; Edward Joshua Edwardes, St. Mary's Hospital; T. K. Rogers, University College; W. A. Kidd, Guy's Hospital. *Third Class*.—Herbert Duke, Guy's Hospital; John Geoffrey Langley, University College; William Henry Lamb, Guy's Hospital. *Forensic Medicine: First Class*.—A. J. Pepper (Scholarship and Gold Medal), University College; W. A. Kidd (Gold Medal), Guy's Hospital; A. H. Jones, Guy's Hospital. *Second Class*.—J. G. Langley, University College; Charles Edward Harrison, St. Bartholomew's Hospital; Thomas Sharp Parry, University College; T. K. Rogers, University College. The following have passed the M.D. examination:—George Henry Batterbury, King's College; Henry James Benham, University College; Clement Dukes, B.S., St. Thomas's Hospital; Peter Thomas Duncan, B.S., (obtained the number of marks qualifying for the medal), University College; George Garlick, University College; Vincent Dormer Harris, St. Bartholomew's Hospital; Walter Benoni Houghton, B.S., University College, and Charing Cross Hospital; Jean Arthur Hullard, B.S., B.Sc., University College; Daniel John Leech, Owens College; Walter George Lowe, St. Bartholomew's Hospital; Joseph Cooke Verco, (Gold Medal), St. Bartholomew's Hospital. *Logic and Moral Philosophy only*.—Richard Legg Batterbury, King's College; Robert Charles Brown, King's College; Richard Petch, King's College. The following have passed the recent B.S. examination:—*First Division*.—Samuel Herbert Burton, University College; Andrew Duncan, M.D., King's College; Joseph William Hunt, University College; Walter Ottley, University College; Augustus Joseph Pepper, University College. *Second Division*.—Walter Aubrey Kidd, Guy's Hospital; Thomas Sharp Parry, University College.—The M.S. Examination has been passed by Alfred Pearce Gould, University College. *Logic and Moral Philosophy Only*.—Leander Starr Jameson, University College.







